Profitable Gasoline and Oil Business Lies in Oil Company Stations

Analysis of Figures Presented by Distribution Expert of Chamber of Commerce of United States Shows Oil Company Station Average Sales Are Three Times Those of Average Dealer Stations

THE first analysis of sales at gasoline stations complete enough to throw real light on this question is herewith offered in an article based on figures presented by Alvin E. Dodd, manager of the domestic distribution department, of the United States Chamber of Commerce.

The outstanding feature of his study is that a much greater proportion of sales of gasoline and oil are through oil company stations, as compared with dealers' places, than is often assumed.

Additional emphasis is thus thrown on the question of the profitableness of most individual dealer accounts.

Sales in individually owned and oil company stations are divided into various groups and analyzed by Mr. Dodd. Worth while comment is also given on handling side lines to increase profits.

MR. GASOLINE JOBBER, what percentage of your outlets are profitable?

Most of them, or less than half? If the latter, would it be better to concentrate your efforts to increase the business of the profitable outlets and let the others show reason for their existence, or perish?

These are a few of many questions inspired by Alvin E. Dodd, manager, domestic distribution department, Chamber of Commerce of the United States, who recently addressed the Ohio Petroleum Marketers Association at Columbus.

Carrying of automobile supplies and other side lines by stations which are unprofitable as gasoline and oil outlets alone, does not often help the situation, Mr. Dodd brought out. The side lines generally makes the business worse, in that additional capital is required, and time and attention of station operators is taken from the work of selling the main line, gasoline and oil, to catch an occasional customer of the other merchandise.

Mr. Dodd presented statistics to show that a great many gasoline and motor oil outlets—virtually all of them drive-in service stations—sell a surprisingly small volume of gasoline and oil in a year. The figures were collected in 10 cities in the survey of retail distribution made by Mr. Dodd's department and the Bureau of the Census of the United States Department of Commerce. The cities are Chicago, Baltimore, Kansas City, Mo., Kansas City, Kans., Denver, Atlanta, Seattle, Syracuse, N. Y., Springfield, Ill., and Fargo, N. D.

In these cities were 3227 retail gasoline outlets, exclusive of those businesses in which selling of gasoline and motor oil was of minor importance in relation to other merchandise handled. They did a gross business of $110,147,500 in 1926, an average of $34,133 per station.

"Fine!" you will exclaim. But Mr. Dodd went more deeply into the figures and this is what he found:

Chain stations—those owned by the major oil companies and the local marketers who operated two or more stations—numbered 1,550, or less than half the number of stations in the 10 cities. The chain stations, however, did $84,114,700 of the business, or 76.4 per cent. Their sales averaged $54,267 a station.

Individually owned stations numbered 1,677 or 52 per cent of the total. Their sales in 1926 aggregated $26,032,000, 23.6 per cent of the total. Their sales averaged $15,523 a station.

"Pretty good business, all in all," you comment, but let's break down the figures as Mr. Dodd did for the Ohio marketers.

Of the 1677 individually owned stations, 547 sold less than $5,000 of gasoline and oil a year. Sales of these 547 totaled $1,310,000 in 1926, or an average of $2,395 a station. This was only $46.05 a week or $6.56 a day. These amounts are gross. Out of them the dealer had to pay for his goods, his help, his rent, and all other expenses.

These 547 stations were 32.6 per cent of the 1,677 individually owned stations yet they did only 5.035 per cent of the business done by the individually owned stations. They were 16.9 per cent of the 3227 stations covered in the survey, but they did only a little more than 1 per cent of the business done by the 3227 stations.

Surely there is little profit in serving a station whose gross receipts are only $6.56 a day. If sales were all gasoline at 16 cents a gallon—a figure that would be nearer an average for cut price than for regular stations—the gallonage would amount to only 41 gallons a day. If the price a gallon were more the gallonage would be less.

Don't think that this average gallonage is too low for these 547 stations. In Ohio, according to an estimate of the state tax commission, average gallonage

ALVIN E. DODD
Manager, Domestic Distribution Department, Chamber of Commerce of the United States

Are your gasoline outlets busy like this station of the Barkhausen Oil Co., Green Bay, Wis.?

in the state—the very best stations being included in the computations—is only 36 gallons a pump a day. The Ohio estimate is based on tax paid gallonage in 1927 and pump estimates made by several official sources assembled by the commission.

The foregoing is the gloomiest part of the picture.

Now for some improvement. Mr. Dodd said the survey showed 366 individually owned stations did $5,000 to $10,000 business a year, or a total of $2,542,000 in 1926. These stations were 21.8 per cent of the 1677 individually owned stations and their sales were 9.76 per cent of the total individually owned stations. Although they were 11.3 per cent of the total stations covered in the survey they did only approximately 2 per cent of the business done by the 3227 stations.

The 366 stations averaged $6.942 a station for the year. This was $133.50 a week or $19.02 a day for 365 days.

Next up the ladder were 475 stations that sold $10,000 to $25,000 each in 1926, or a total of approximately $7,433,000. These stations were 28.3 per cent of the 1677 individually owned stations and did 28.5 per cent of the total business of the 1677 stations. Their business can be accurately described as "average."

Average gross business of the 475 stations was $15,646 a year, $300.88 a week, or $42.86 a day for 365 days. Sales of these stations were about 7 per cent of the sales of the 3227 chain and individual stations.

Gross sales of these 1,388 individual stations reviewed so far were $11,285,000, or 43.3 per cent of the sales by the 1677 individual stations of which they were 82.8 per cent. That leaves 17.2 per cent of the individual stations to do 56.7 per cent of the business by this class of stations.

Of the 289 individual stations that did more than $25,000 a year business, 73 exceeded $50,000 a year, ranking with the chain stations. These 73 did $8,540,800 or 7.75 per cent of the total business done by all stations, or three-fourths as much business as the business of the 1388 smaller stations whose sales statistics have just been broken down.

The business of the 289 averaged $51,030 a station in 1926, $981.34 a station a week, or $139.81 a station a day. These stations did almost as well as the 1,550 chain stations whose average sales were $54,267 in 1926. Each chain store averaged $1,043.60 a week and $148.67 a day. Stations of many Independent marketers are included in the chain classification.

Much of the worry of jobbers over tank wagon prices, loaned equipment, delivery costs, credit risks, and other operating expenses is encountered in the individual station trade. The case, therefore, turns to the question, each jobber might ask himself, "What percentage of my jobbing outlets are profitable and is it worth while to spend time, money and energy in building a large gallonage spread thinly over a wide area?"

"It is all very well to say that these stations must be located conveniently for the motorist to pick up his supplies wherever he is and the small stations are essential to provide service," Mr. Dodd told the Ohio marketers.

"Go a step further and say that they can augment their sales by carrying a little stock of accessories—or even cigarets and confections of the cheaper sort; but if you investigate you will find that doing this will make their situation worse instead of better. Many of them may already be carrying these supplemental articles—if they are, however, they are included already in the sales figures reported.

"All of these side lines to which retailers turn to 'help carry the load'

March 14—"Better Merchandising" Issue

NEXT issue of NATIONAL PETROLEUM NEWS, in addition to the account of the spring meeting of the American Oil Men's Association, March 6, 7, 8, in Chicago, will contain special articles for oil marketing companies.

Building sales at service stations—new developments in super service stations—how the local company may get a bigger share of the tourist trade—window displays at stations to increase sales—working up burner oil business—will be among subjects covered by special articles in this issue.

do not help carry the load, except in rare instances. They tend to divert attention from the business which is primary; to absorb too much of the already too limited capital available, and to add to the tasks which must be performed to carry even the smallest of side lines.

"The supposition is that this added burden can be added without feeling it. The fact is the accidental sale is attracted so infrequently that it does not pay its way.

"There is nothing these places have for sale really, but services—the merchandise could be sold as readily in larger places, if these smaller ones did not exist. If they are selling services, let them make the services as thorough and painstaking as they can be made. That is the only way that the station can be marked and build custom—for, strangely enough, we come back always to the basic fact—that customers make business and what the customer wants is the thing that finally weighs in the balance.

"Find out what customers want and supply it. If the customer does not know what he wants, then find out what he should have and supply that. Do not try to give the customer what he should have instead of what he wants, unless you know that what he wants is actually detrimental to the customers' interests. If it is detrimental, you should not carry it at all.

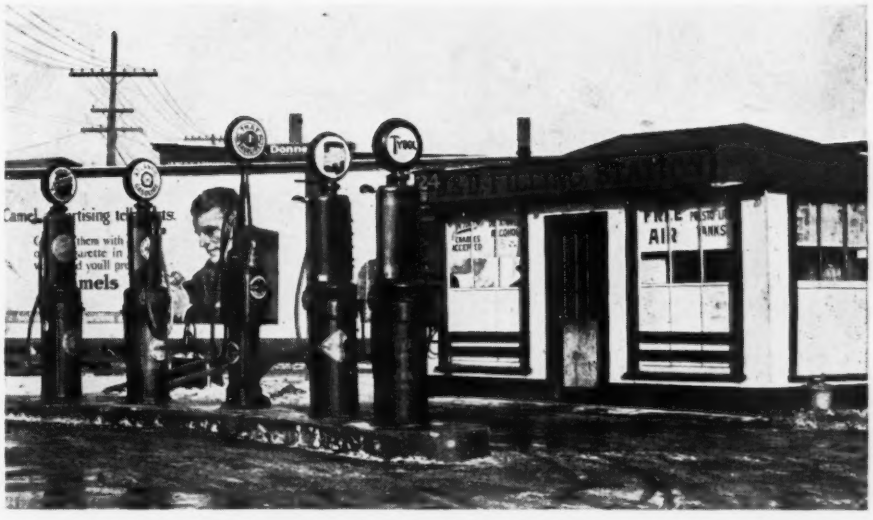
"There is a great deal of hesitance among merchants to let a customer go to a competitor because they have not what is wanted. That is not always bad business."

Mr. Dodd gave three examples of how jobbers in other lines have cut the cost of distribution.

One jobber proposed to reduce his lines a third, his territory a quarter, and his accounts a half. He laid his proposition before his customers and they approved it. He pared services to a size warranted by the volume of business and shared his savings with his customers. His volume of business was increased by concentrated effort.

ANOTHER jobber ascertained what lines paid him a profit and which he handled at a loss. Mr. Dodd said. This jobber showed his figures to his customers and learned that on the lines he sold at a profit they made a profit, and on the lines he sold at a loss they also lost. The unprofitable lines were discontinued. Both jobber and dealers benefited.

A third jobber found that collections came an average of 60 days after goods were shipped from his warehouse. He proposed to dealers that he stock their shelves and his salesmen who were converted into auditors, should inventory the stocks once a month. The dealers were to pay for only the goods they sold. They held the stock only on consignment. The plan was adopted. The jobber's stocks are much smaller than formerly. The jobber is paid as the goods are moved to the consumer, thus minimizing credit risks. This system is used by General Electric Co. in distributing electric lamps.



Or, are your outlets like this place, where five different oil companies put in pumps at one dealer's station in Boston?

WHENEVER a dealer moves anything especially well, the auditor who has had sales experience, ascertains the reason and good merchandising ideas are passed among other dealers. This system outlined by Mr. Dodd might be tried by oil and gasoline jobbers, particularly with motor oils.

A modification of the system of this third jobber already is being tried by many jobbers. They demand payment for a load of gasoline when the next following load is delivered. This system keeps credit to a short term basis, sometimes on a day to day basis.

Examination of the volume of business done by chain and individual stations in some of the 10 cities, reveals further evidence that some dealer accounts probably are not profitable.

In Chicago, Mr. Dodd said the survey revealed, were 1535 gasoline and oil outlets in 1926 of which 615 or 40 per cent were chain and 920 or 60 per cent individual. Sales in 1926 amounted to $51,908,900 at the 1,535 stations. Of this amount $38,558,200 or 74.28 per cent was done by chain stations and $13,350,700 or 25.72 per cent by individual stations.

In Baltimore of 221 outlets, 139 or 62.89 per cent were chain and 82 or 36.11 per cent individual. The chain stations in 1926 did $10,671,600 or 80.97 per cent of the business and the individual stations, dealer accounts, $2,508,500 or 19.03 per cent.

In Kansas City, Mo., 282 or 67.79 per cent of 416 outlets were chain and 134 or 32.21 individual. In 1926 the chain business amounted to $10,527,000 or 79.48 per cent and the individuals to $2,715,500 or 20.52 per cent.

In Kansas City, Kans., 28 or 42.43 per cent of the 66 outlets were chain and 38 or 57.57 per cent were individual. Chain stations did 68.58 per cent of the $1,315,600 business in 1926 and individual stations 31.42 per cent.

In Atlanta, 142 or 72.45 per cent of the 198 stations were chain and 54 or 17.55 per cent individual. Chain stations did 88.66 per cent of the $6,437,400 business in 1926 and individual stations 11.34 per cent.

In Seattle 89 or 27.56 per cent of the 323 stations were chain and 234 or 72.46 per cent individual. The chains in 1926 did 55.59 per cent of the $8,173,300 business and the individual stations 44.41 per cent.

Why do the oil company owned stations sell more gasoline and oil than the individually owned stations? Perhaps the business psychologists can answer this question but a survey conducted in 1927 among 500 motor car owners in 100 cities gives as good an answer as any. Of these motorists who were picked at random from registration lists 47 per cent replied that *brand* influenced their purchases of gasoline and oil.

IT MAY be that chain stations are able to advertise their brands more extensively. If chain stations are far more profitable than the individual stations they undoubtedly have more money with which to keep the names of their product before the buying public. In the language of the advertising experts they may be more able to make consumers *brand conscious.*

The individual station on the other hand may work up a fine business by intensive cultivation of a small territory by means of personality and quality of service and merchandise. The business of the 289 stations reported in the Chamber of Commerce —Bureau of the Census survey attests to that. However, the individual station may attract fewer casual buyers.

Fueling a U. S. air mail plane at the Houston Airport from the special built service truck

Truck Serves Planes at Houston Airport

Staff Special
HOUSTON, March 3

WHEN the newly opened Houston airport was built by private enterprise its owners recognized that adequate fueling facilities were essential.

Therefore, the Houston Airport Corp. saw fit to supplement its stationary fueling facilities with a specially built truck for servicing a plane at any location on the field.

A Chevrolet truck was equipped to carry 200 gallons of aviation gasoline, 50 gallons of lubricating oil, 60 gallons of water and an air tank. The 200-gallon rectangular gasoline tank is equipped with a 5-gallon pump and 30 feet of hose; the 50-gallon rectangular tank for heavy motor oil is equipped with a 1-gallon pump; and the 60-gallon water tank is similarly fitted with a 1-gallon pump. At the rear of the truck is a 60-gallon air tank, with 25 feet of hose.

Pumps at the fueling rack, which normally fill service requirements, are installed in such position that the necessity for shifting planes about is avoided. The separate pumps provided are operated by compressed air and wet nozzles at the end of 60 feet of filling hose. This admits of one-man control in fueling planes. These pumps are supplied with hand cranks for emergency use.

Water and air hose are also conveniently placed near the gasoline pumps in the paved area, 120 feet in diameter, which is termed the fueling rack. Two grades of gasoline are offered—aviation and commercial. Underground storage is provided for 2500 gallons of each grade.

Consolidated Oil Co. of Houston, distributors for Sinclair products, furnish the gasoline and lubricating oil. James B. Russ, president of the Texas Independent Oil Men's Association, a state organization of jobbers, heads the Consolidated. W. C. Czigan is secretary treasurer.

The Houston Airport Corp. is headed by H. A. Nelms, also identified with the W. T. Carter Lumber Co., builders and sponsors of the Garden Villas sub-division, near the airport. C. P. Neuhaus is the airport manager.

HOUSTON'S airport, a rectangular field 2,700 feet from north to south and 3,120 feet from east to west, is nine and a half miles out from the post office on the Houston-Alvin-Freeport highway. The Garden Villas-South Houston highway forms the north boundary of the field.

The landing field measures 2,620 feet square within the boundary lights. Soil is of sandy loam, sown with Bermuda grass. There are no runways, as the field may be used for landings and take-offs in any part. Sufficient natural fall provides adequate drainage. A regulation circle 100 feet in diameter, marks the center of the field.

Three steel hangars have been provided. One is 75 x 120 feet, with 20 foot clearance at the entrance; the other two hangars are 60 x 120 feet with similar entrance clearance. One wooden Tee hangar is 100 x 30 feet.

Besides providing a commercial field and landing for United States mail planes, the Houston airport is headquarters for the Thirty-sixth Division Air Service, National Guard, which will have exclusive use of the two 60 x 120 foot steel hangars. These have been placed in the southwest corner of the property, together with a steel warehouse, 30 x 60 feet, and an office building for the commanding officer, supply officer and radio.

Index to Coming Meetings

Wisconsin Independent Oil Jobbers Association, Hotel Plankinton, Milwaukee, March 14.

Independent Oil Men's Association of New England, American House, Boston, Mass., March 14, 15.

Minnesota Petroleum Association, Radisson Hotel, Minneapolis, March 14, 15.

Independent Oil Men of America, annual election, Stevens Hotel, Chicago, March 19, 20, 21.

American Association of Petroleum Geologists, business and technical sessions in San Francisco, March 21, 22, 23; field trips and entertainments, Los Angeles, March 24, 25.

American Oil Burner Association, Hotel Stevens, Chicago, April 3, 4, 5, 1928.

American Chemical Society, St. Louis, Mo., Apr. 16, 17, 18, 19.

Nebraska Independent Oil Men's Association, Hotel Kearney, Kearney, Neb., Apr. 18, 19.

National Petroleum Association, Cambridge Springs, Pa., April 19, 20.

Kansas Oil Men's Association, Hotel Lassen, Wichita, Kan., Apr. 26, 27.

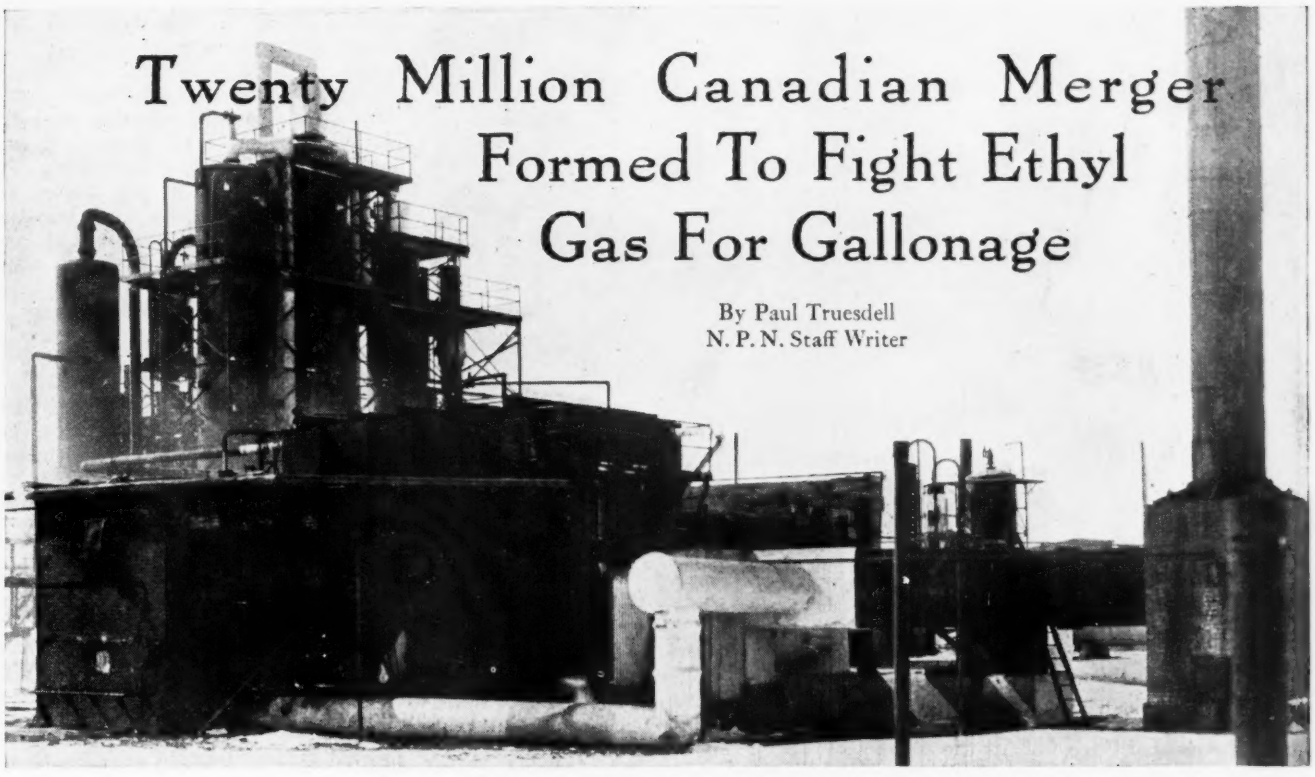
Natural Gasoline Department of American Gas Association, Texas Fair Grounds, Dallas, May 7, 8, 9, 10.

National Oil Scouts of America, Amarillo, Tex., May 21, 22.

Natural Gasoline Association of America, Hotel Mayo, Tulsa, May 22, 23, 24.

Twenty Million Canadian Merger Formed To Fight Ethyl Gas For Gallonage

By Paul Truesdell
N. P. N. Staff Writer



General view of the Gyro plant at the refinery of the Frontenac Oil Refineries Ltd., Montreal, Canada. Converters on right and left, pipestill in center, circulating fan and ducts in right foreground and fractionating towers in background

CLEVELAND, March 3

"Ladeez and Gentlemen:

"In this corner you see Ethyl Gasoline, the Knockless Terror.

"And in that corner you see Kid Gyro, known as Benzol or Better. They will fight to a finish for the antiknock championship of the Dominion of Canada."

The ring is prepared, the fighters are getting ready and the audience, which is the motoring public of the dominion, which will give the final decision, is waiting expectantly.

Thus, in the language of the prize ring, might be made known the fact that a $20,000,000 merger of two Canadian refining and marketing companies has been effected to manufacture Gyro gasoline on a large scale and distribute it throughout the dominion. Gyro gasoline is a vapor phase cracked product, the process for making which was first announced only a few months ago.

It is the first time since Ethyl gasoline was brought out about five years ago, that a pure petroleum product has been offered to motorists over a wide marketing territory in opposition to Ethyl gasoline on the basis that it is equal to or better than Ethyl gasoline from an anti-knock standpoint.

That is not to say, of course, that Ethyl gasoline has not had plenty of competition. It has and it is still getting it. However, competitive fuels are usually offered at least partly on the claims of superiority in other respects than straight antiknock value. Also, of course, other fuels have been marketed in limited territories against Ethyl gasoline on a straight out antiknock basis.

The exclusive marketer of Ethyl gasoline in Canada is Imperial Oil Ltd., subsidiary of the Standard Oil Co. of New Jersey and the dominant refining and marketing factor in the dominion. The company that is to put out the pure petroleum vapor phase cracked antiknock fuel is the McColl-Frontenac Co., Ltd., which was formed by the merger of two companies, McColl Bros. of Toronto and Frontenac Oil Refineries, Ltd., of Montreal.

THE merger was completed on Jan. 10, of this year. It is so new that the officers and directors have not as yet all been named. However, the president of the new company is John Irwin, one of the industrial leaders of Canada. He is the head of large dye and paint companies and has extensive interests in other lines. The merger was effected through the efforts of Nesbitt & Thomson, Montreal banking house.

The McColl-Frontenac Co. has taken from the Gyro Process Co. an exclusive license to operate the Gyro vapor phase cracking process in Canada.

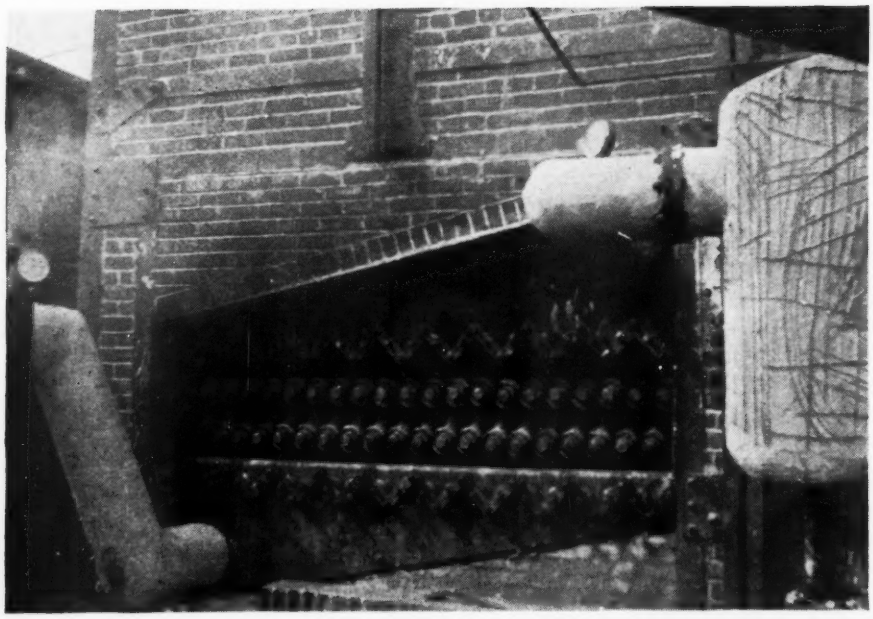
As has been previously stated in NATIONAL PETROLEUM NEWS, Pure Oil Co., Chicago, owns a large interest in the Gyro Process Co. and is the active technical and operating factor in that company. It was mostly due to the work of Pure Oil Co. engineers that the process has been brought to the stage where it is regarded as an assured commercial success.

The operation of the Gyro process, as carried on in the first commercial unit built by the Pure Oil Co. at its Cabin Creek, W. Va. refinery, was published on Page 20 of the Nov. 16, 1927 issue of NATIONAL PETROLEUM NEWS.

The McColl-Frontenac Co. Ltd. now has one Gyro unit capable of producing about 750 barrels a day of finished Gyro gasoline. This is located at the Frontenac refinery in Montreal and is the unit on which a great amount of work for the development of the process into a commercial success was carried on.

J. A. Wales, vice president in charge of refinery operations of the Frontenac company, was active for about three years ironing out the bugs in the process on the unit at Montreal. This unit has been making vapor phase gasoline for some time and the fuel has been marketed through Frontenac stations under the name of "Cyclo Gas."

THIS name was originally chosen by the Pure Oil Co. for the product of the vapor phase cracking process but it was changed to Gyro on the protest of the Associated Oil Co. of California that it was too close to the Associated name, "Cycol" used on motor oils. Whether this objection will also prevent the use of the name "Cyclo" in Canada is not certain. If it does not, the name will be kept as more truly descriptive of the product,



Close-up front view of Gyro converter, Frontenac Oil Refineries Ltd., Montreal

inasmuch as it is made up mostly of cyclic hydrocarbons.

Work has started on the construction of a second Gyro unit at the plant of McColl Bros. in Toronto, this to have a capacity of 1000 barrels a day of finished motor fuel, and plans call for the probable erection of a third plant in Winnipeg in the near future to take care of the western trade.

The new merger consists of two refineries, as before stated, and more than 50 bulk and service stations.

The refinery of McColl Bros., at Toronto was described in the April 7, 1926, issue of NATIONAL PETROLEUM NEWS, page 41. It consists of two Foster pipe stills with fractionating equipment, having a crude capacity of about 1500 barrels a day, and a Jenkins cracking still which originally had capacity of about 1000 barrels a day, but which has been increased 50 per cent in capacity by the installation of Lientz flue gas recirculating equipment.

THE plant has also a Gray vapor phase treating tower for the Jenkins cracked gasoline and a continuous acid treating plant as well, and a modern boiler plant comprising two 219-horsepower Kidwell boilers designed for oil burning and equipped with Foster superheaters. The products of the refinery are gasoline, kerosene, gas oil, furnace oil and heavy fuel oil. The refinery was built in 1926 and has been operating at capacity practically ever since.

The introduction of the flue gas recirculating system in the Jenkins cracking unit gave such good results when designed to recirculate 20,000 cubic feet per minute that it was decided to increase the volume of gases handled. The original recirculation was handled by a high speed fan, the wear on which was rather severe.

The unit is now being remodeled to give a gas recirculation of 40,000 cubic feet per minute by means of a larger low speed fan, the shaft of which runs on bearings which are outside of the hot zone. It is expected that this will bring the throughput capacity of the Jenkins unit up to 2000 barrels a day. The fan is of ascoloy, guaranteed to withstand temperatures up to 1500 degrees Fahr.

The installation of the Gyro unit now being built will include the erection of a pipe still which will increase the skimming capacity of the plant to 3000 barrels a day. The distillation in the pipe still will be handled by means of excess heat from the Gyro converters.

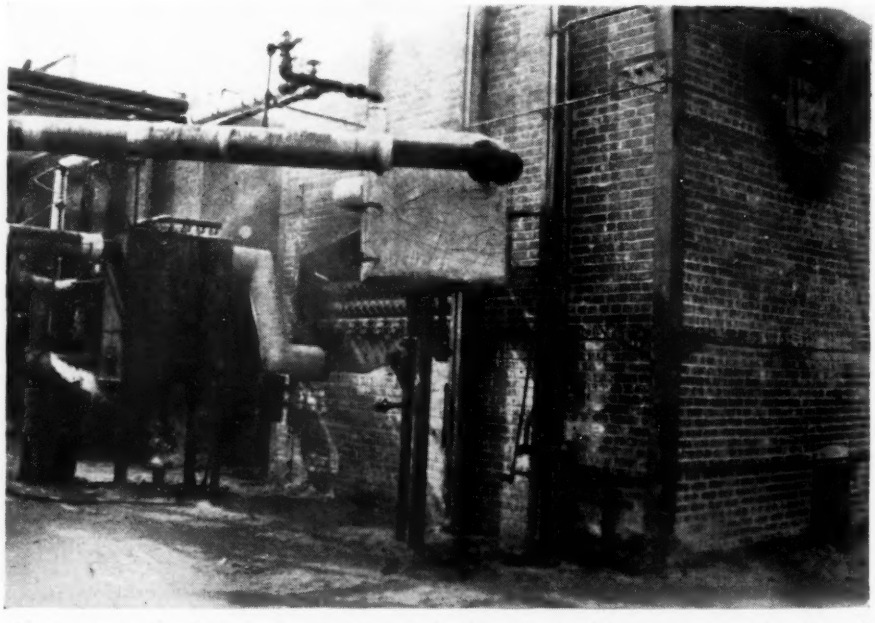
Without the pipe still hookup, part of the heat from the converters would be wasted and would thereby bring up the manufacturing cost of Gyro gasoline.

The refinery was built to furnish gasoline to the McColl trade in the vicinity of Toronto shortly after the McColl brothers had decided to embark in the gasoline business. The company had been a big factor for more than 50 years in the lubricating oil trade of the Dominion, but only entered the gasoline business about four years ago.

Crude for the Toronto refinery is bought from the Prairie Oil & Gas Co. and transported by pipe line to the refinery of the Standard Oil Co. of New York at Buffalo. From there it is transported in a tanker owned by McColl Bros. across Lake Ontario to the refinery. The tanker, on the return trip to Buffalo, carries a cargo of fuel oil, which is sold on contract to a manufacturing company in Buffalo close to the Standard Oil Co.'s dock so that the tanker can unload the fuel and load crude handily.

McColl brothers also brought into the merger about 40 bulk and filling stations in Ontario, and bulk stations and dealers scattered over all the provinces of the Dominion, to the Pacific coast. They had built up a very large gasoline and motor oil business. J. W. McColl was president of the company. He has sold out his interests and severed his connection.

S. S. GRIFFITHS was vice president of the company in charge of marketing; Arthur Hughes vice president and controller and H. H. Bradburn, vice president in charge of the company's western division, with headquarters at Winnipeg. While the Toronto refinery furnished most of the gasoline sold through the McColl outlets in eastern Canada, a large amount was bought for the trade farther west from Skelly Oil Co., Cushing Refining & Gasoline Co. and Marland Refining



New converter for Gyro process, front view showing trap for inlet vapors on right side and tarleg for outlet vapors on left side. Frontenac Oil Refineries Ltd., Montreal

Co. The Frontenac Oil Refineries, Ltd., plant was built about four years ago, primarily to exploit the vapor phase cracking system known as the Ramaje process. The group of automobile engineers who had taken up the Ramaje process and were working to perfect it at a plant in Toledo, O., interested John Irwin and his associates in the rights for Canada. The present Gyro process was developed partly on the basis of the Ramaje process.

However, many technical operating difficulties had to be surmounted before the plant became a real commercially profitable enterprise. Mr. Wales is a chemical engineer who went to the Frontenac from long experience in the alcohol industry. He was charged with responsibility for making the process a success. As before stated, much of the data on which the latest Gyro plants have been built were obtained during the development of the plant at the Frontenac.

The Frontenac refinery consists of a 3000-barrel a day skimming plant and the 750-barrel Gyro plant previously mentioned. They are run in conjunction, the waste heat from the vapor phase cracking unit being used to vaporize the crude in a pipe still.

Crude for the Frontenac plant has been bought in Oklahoma or on the Gulf coast and transported by tanker up the Atlantic coast and up the St. Lawrence river to the refinery.

For some months, the Frontenac has been selling "Cyclo Gas" at a premium of 3 cents a gallon in its string of stations in Montreal and along the river to Kingston. John Irwin is president of the Frontenac.

The license taken from the Gyro Process Co. includes rights for the McColl-Frontenac Co. to relicense the process in the Dominion.

Myers Gross Sales Manager

WICHITA, March 3.—Myers Gross, formerly of the Refiners Consolidated Sales Co. has been made sales manager for the Vickers Petroleum Co., it was announced today by J. A. Vickers, president. Mr. Gross succeeds C. W. Rice who has resigned.

For the benefit of Vickers customers Mr. Rice will continue to work with Mr. Gross for the present. There will be no change in the company's policies.

TULSA, March 3.—The Independent Oil & Gas Co. has moved its general offices into the newly completed Philtower building erected at Fifth and Boston by Waite Phillips. The company is occupying the tenth, eleventh and twelfth floors. Former offices were in the Kennedy building.

Work Asks Governors' Views On State Oil Legislation

WASHINGTON, March 1

SECRETARY of the Interior Hubert Work, chairman of the Federal Oil Conservation Board, has sent out a letter to the governors of the 20 oil producing states.

He asks for their views on the possibility and probability of all the oil producing states uniting upon a program of uniform state legislation to make legal development of oil pools in the most efficient and economical manner through agreements between companies if necessary.

This action of the chairman is in line with the recommedation of the Committee of Nine, appointed by him to represent the government, the oil industry and the American Bar Association in a study of methods of handling oil and gas production, to prevent uneconomic methods that often cause distress. The gas phase particularly was to be studied.

Here is Secretary Work's letter:

"Following an exhaustive inquiry into national petroleum conditions with a view to establishing a proper basis for practical conservation, this board several months ago invited a Committee of Nine, consisting of three representatives of the oil industry, the American Bar Association and the Federal Government, respectively, to formulate a legislative program with this object in view. This committee, as you doubtless are aware, has suggested a constructive program, but recommends:

> Immediate further study into the matter of the waste of natural gas, in order that legislation may be formulated which will forbid such waste as fully as may be done without working injustice and unreasonable hardship.

"The trend of thought in the oil industry is decidely in favor of remedial action. This viewpoint is in accordance with government policy.

"In its report of a year ago, the Federal Oil Conservation Board urged 'active co-operation between the oil-producing states in the study of proposed legislation to the end that uniform laws may be enacted, or even agreements or compacts entered into between the states subject to ratification by congress.' The Committee of Nine likewise recommended the same course in its report to this board. a copy of which I am inclosing for your information.

"At this time it seems to me that an expression of opinion by the Governors of oil-producing states would be opportune, as to the possibility or probability of all the oil-producing states uniting upon uniform state legislation.

"I know that you have given much thought to this vital matter. What we desire, of course, is practical conservation of our petroleum resources by whatever means is most feasible. I would appreciate if you will let this board have your viewpoint, together with such recommendations as you may care to advance.

"I am addressing a similar letter to the governor of each of the oil-producing states."

The governors to whom the letters were sent are:

John E. Martineau. Arkansas.
C. C. Young, California.
William H. Adams, Colorado.
Len Small, Illinois.
Edward Jackson, Indiana.
Ben S. Paulen, Kansas.
Flem D. Sampson, Kentucky.
O. H. Simpson, Louisiana.
Fred W. Green, Michigan.
John E. Erickson, Montana.
Richard C. Dillon, New Mexico.
Alfred E. Smith, New York.
A. V. Donahey, Ohio.
Henry S. Johnston, Oklahoma.
John S. Fisher, Pennsylvania.
Henry H. Horton, Tennessee.
Dan Moody, Texas.
George H. Dern, Utah.
Howard M. Gore, West Virginia.
Frank C. Emerson, Wyoming.

O. P. Keeney Will Represent Shaffer in East

CHICAGO, March 3.—Keeney Oil Co., headed by O. P. Keeney, 11 Broadway, New York, has been appointed official sales representative of Shaffer Oil & Refining Co., Chicago. An announcement to this effect was broadcast to the eastern oil trade under date of Feb. 27, signed by B. L. Majewski, general sales manager of Shaffer. In one paragraph the letter said:

"Please understand that we have not established a brokerage outlet but that we desire to serve you through our representatives established in New York so that you will get the same service and the same quotations as you would from our general sales office in Chicago."

Shaffer officials in Chicago say this does not mean that the refining company has annexed the Keeney Oil Co., as exclusive eastern representation. Keeney Oil Co. will continue to buy and sell petroleum products as before in addition to representing the Oklahoma refiner.

Stewart Re-elected Chairman; Indicted for Contempt

CLEVELAND, March 5

IN WHITING's petroleum laden atmosphere March 1 met a small group of hard-headed business men. Armed with proxies they came to chose the directors who are to guide the destinies of the Standard Oil Co. of Indiana another year. Without the votes of the 1,339,920 shares controlled by John D. Rockefeller, Jr., they re-elected Col. Robert W. Stewart a director. With the shares controlled by Mr. Rockefeller they re-elected all other directors with the exception of Dr. William M. Burton, former president, who has retired.

Shortly afterward, back at 910 S. Michigan Ave., Col. Stewart was re-elected chairman of the Indiana company's board, received felicitations, and expressed gratitude at the confidence majority stockholders placed in him. E. G. Seubert was re-elected president. Two vacancies on the board will be filled later probably with men from the board of the controlled Pan American Petroleum & Transport Co.

Col. Stewart opened the Whiting meeting but soon relinquished the chair to Mr. Seubert, who read this letter from Mr. Rockefeller:

> "Some time ago proxies in the official form covering my holding of stock were forwarded to Col. Stewart, you and Mr. Graham as the proxy committee. I am not prepared at this time to vote either for or against Col. Stewart's re-election as a member of the board. I wish, therefore, to have the proxy committee vote my stock for the re-election of all of the present members except Col. Stewart.
>
> "That my position may be understood, I shall be glad to have this letter read at the annual meeting before the election of directors. The finance committee of the Rockefeller Foundation has directed the assistant treasurer to issue to your proxy committee similar instructions as to the voting of the foundation's stock."

The Rockefeller holdings amount to only 402,280 shares or about 4½ per cent of the company's 9,231,450 shares. Only 140 certificates are in Mr. Rockefeller's name. Others are held in names of H. T. Fish, 137,900 shares; A. H. Bates, 130,000 shares; Robert W. Gumbel, 130,000 shares, and Butler, Herrich & Marshall, 4,240 shares. Remainder of 1,339,920 shares are those held in trust for Mr. Rockefeller's two sisters, the Rockefeller Foundation and other philanthropies.

In Washington the next day a federal grand jury returned an indictment against Col. Stewart for alleged contempt of the United States Senate. Col. Stewart three weeks earlier had failed to answer questions about the profits of the mysterious Continental Trading Co., asked him by Chairman Nye of the Senate committee on public lands which is still investigating the leasing of Teapot Dome to Harry F. Sinclair.

Concerning the action of Mr. Rockefeller in not voting for Col. Stewart, Senator Nye said: "I had hoped for something better from Mr. Rockefeller than that."

Said Senator Thomas F. Walsh, "prosecutor" of the Teapot Dome investigation: "I regard that, of course, as tantamount to an endorsement by the Rockefeller interests of Col. Stewart's management of the business in the face of the testimony that he was faithless to its interests."

An associate of Mr. Rockefeller gave out March 2 this statement at 26 Broadway:

> In discussing today the position taken by John D. Rockefeller Jr. yesterday at the annual meeting of the stockholders of the Standard Oil Company of Indiana, Thomas H. Debevoise, one of his associates, said:
>
> "The published correspondence which Mr. Rockefeller had with Senator Walsh showed that Colonel Stewart had offered to resign from the Indiana company on request. In view of this offer and of the fact that his resignation is available at any time, it is clear that nothing would have been gained by opposing Colonel Stewart's re-election yesterday.
>
> "Mr. Rockefeller has in his correspondence and in his testimony indicated clearly that if and when he felt that Colonel Stewart's resignation should be had, he would not hesitate to request it as far as his stock is concerned. Mr. Rockefeller is seeking the facts and is now taking and will take such steps in the matter as he thinks proper. Since more than fifty thousand other stockholders of the Indiana company are involved, it is obvious that Mr. Rockefeller must not act precipitately."

Like most other oil companies Standard of Indiana did not do so well last year. After all charges its 1927 net was $29,401,308. This was $3.26 a share. In 1926 it netted $6.03 a share. It failed to earn the dividend it paid last year by $1,997,714.

Col. Stewart attributed this showing to "the reduced realization of sales of petroleum products, as well as to a loss occasioned by the large carry-over of the petroleum products inventory on Dec. 31, 1926, at prices in excess of realization during 1927."

The Teapot Dome inquisitors drew from Will H. Hays, one time chairman of the Republican National Committee, admission that Harry F. Sinclair had contributed $160,000 to erase part of the deficit of the Republican party left from the 1920 campaign. Four years ago, Mr. Hays told the committee $75,000 was all Sinclair had contributed. He explained that when he testified in 1924 he regarded the $85,000 additional as a loan.

Representative Oldfield, chairman of the Democratic Congressional committee, called on President Coolidge as a beneficiary of the use of the Continental Trading Co. profits to repudiate Hays' action in taking the bonds and later concealing the fact from the Senate inquirers. The White House was silent.

U. S. Companies Protest French Restrictions

CLEVELAND, March 5.—The French Chamber of Deputies has passed the bill designed to foster petroleum refining in France and exclude American and English companies. The bill fixes import duties on all kinds of oils but gives a benefit of 8½ francs per hectoliter on oil which is to be refined in France. A hectoliter is approximately 26½ U. S. gallons.

American companies are preparing to protest the French law through their subsidiaries that operate in that country. It is charged the bill is discriminatory against American companies because it limits imports of the various companies to the average of what they imported in the last five years. Several American companies have been operating in France on a large scale only the last three years.

It was said in a special dispatch to the New York Times that France eventually hoped to get all its oil supplies from the Russian and Mosul fields. French proponents of the bill have contended, according to the Times, that France needs to establish depots for oil for military emergencies and that crude oil can be stored more economically than the volatile products. Such a policy means the building of refineries in France.

The American government has protested to the Spanish government against the Spanish oil monopoly which absorbed properties and business of American and other foreign companies Jan. 1. The value of the property absorbed is more than the entire capitalization of the state owned Spanish concern which has been unable to pay cash for the property appropriated.

All of the crude and not less than 25 per cent of the refined products are being supplied the monopoly by the American Republics Corp., the J. S. Cullinan holding corporation, through a subsidiary, the Petroleum Export Association, Inc. Spain has been taking more than a million barrels of various products a year from American companies and present requirements are estimated at 2,100,000 barrels a year. Little crude has been shipped there in past years. The Cullinan contract extends five years from Jan. 1, 1928.

Cooperative Testing Halts Hurried Old Style Drilling Campaign

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, March 3

PATIENT planning, countless meetings of operators, and persistency of effort probably have inaugurated a new method of exploring prospective oil territory.

In its essentials, the plan which operators have worked out in the south Little River territory of Seminole county, Okla., is not new. It is the adoption of the familiar "dry hole contract" plan on a big scale, participated in by 23 operators. Joint financing of test wells, whereby the company that drills a well is partly reimbursed by owners of offsetting acreage in the event a dry hole is drilled, is routine practice. Usually, however, there are only three or four parties to such arrangement.

The Little River field, southernmost of the Seminole district pools, gradually moved southward from Secs. 35 and 36 of Twp. 8-6 and Secs. 1 and 2 of Twp. 7-6 into 11-7-6. Then two important wildcats were drilled beyond this. Snowden & McSweeney drilled a producer in the NW of Sec. 13 and the Independent Oil & Gas Co., on acreage of the Highway Oil & Refining Co., brought in a producer in the SW NW NW of 23-7-6. Operators entered into a restrictive agreement, running to March 1, under which these wildcats were held to 100 barrels per day and no offsets were started.

A large body of acreage, held in small parcels, in the region of these tests was due to be tested. Preliminary arrangements were made by the operators to drill a number of wells. A trip through the area last week showed the extent to which this program had been carried. Timbers were on the ground for many rigs, scattered all over the area embraced in the co-operative plan. There had been large concentration of material in warehouses and in contractors' yards farther north where it would be quickly available.

Up to a short time ago it looked as though another one of those old style drilling campaigns was in the making. Umpire Ray M. Collins, who with an operators' committee worked out the details of the plan now in effect, estimated that 50 or 60 wells would be started.

As it now stands, the number of test wells to be drilled in the area of potential production as indicated by the two producing wildcats, will be limited to nine. Six offset wells will be drilled, three to each of the two producing wells. Thus, the number of wells to be drilled has been limited to possibly one-fourth of what it

Endorsement

TULSA, March 5.—That operators in every district of the Mid-Continent field devise and follow methods of co-operative development similar to that carried out in Seminole was urged in a resolution adopted March 1 by the executive committee of the Kansas-Oklahoma division, Mid-Continent Oil & Gas Assoc.

This example will have the "two-fold result of eliminating economic waste and bringing about a more orderly production and marketing of petroleum products," says the resolution.

Here is the committee of Seminole district operators and the umpire who worked on the co-operative wildcatting plan. Left to right J. J. Conry, general superintendent, Carter Oil Co.; Ray M. Collins, umpire; R. F. MacArthur, vice-president, Barnsdall Oil Co.; R. B. Pringle, vice-president, Independent Oil & Gas Co.; J. S. Sidwell, assistant superintendent land department, Prairie Oil & Gas Co. and C. R. Plummer, Pure Oil Co., who serves on the committee in the absence of H. N. Cole, vice-president of the Pure

would have been in the absence of co-operative effort.

The plan is based upon the contribution of $10,000 for each offset to the test wells, in case dry holes are drilled. If the test is a producer, that is the reward of the operator who drills it. If it is a failure, his expense is cut down $30,000. The tests probably will average $60,000 to drill.

The $10,000 figure is the usual guaranteed contribution, but a few exceptions have been made. That they were made without affecting the plan is the strongest indication that operators are making rapid progress in handling their vexatious problems together.

Taking up the tests shown on the accompanying map, the Gypsy Oil Co. will drill in the NW SW SE of 11-7-6. The Texas Co. and the Carter Oil Co. pledge themselves to contribute $10,000 each in the event a dry hole is drilled and Frank Baker pledges $7500, as he has a three-quarter interest in the north offset 40 acres.

T. B. Slick, Inc., in the NE SE NE of Sec. 15 will get $10,000 from each of the offsets, Prairie Oil & Gas Co. and Amerada Petroleum Corp. sharing on the diagonal offset northeast.

Reiter-Foster Oil Co. will get the full $30,000 for a dry hole in the SE NW SW of Sec. 14, Prairie Oil & Gas Co. owning two offsets and U. S. Senator W. B. Pine the other.

Sinclair Oil & Gas Co. will test the 20-acre piece in the NE of Sec. 14. There are four direct offsets to this well, because of the narrow strip it occupies and Carter Oil Co. owning two of them will contribute $15,000 while the Prairie will pay $7,500 for one and Prairie and Amerada $7,500 for the other.

Gypsy Oil Co. will test the NE SE of Sec. 14. Here are more 20-acre pieces. This company will get the $30,000 on which the plan was first based. Carter will pay $7,500; Roxana $7,500; Lenox Oil Co. $4,000 and Skelly Oil Co. $3,500 and Independent Oil & Gas Co. $7,500.

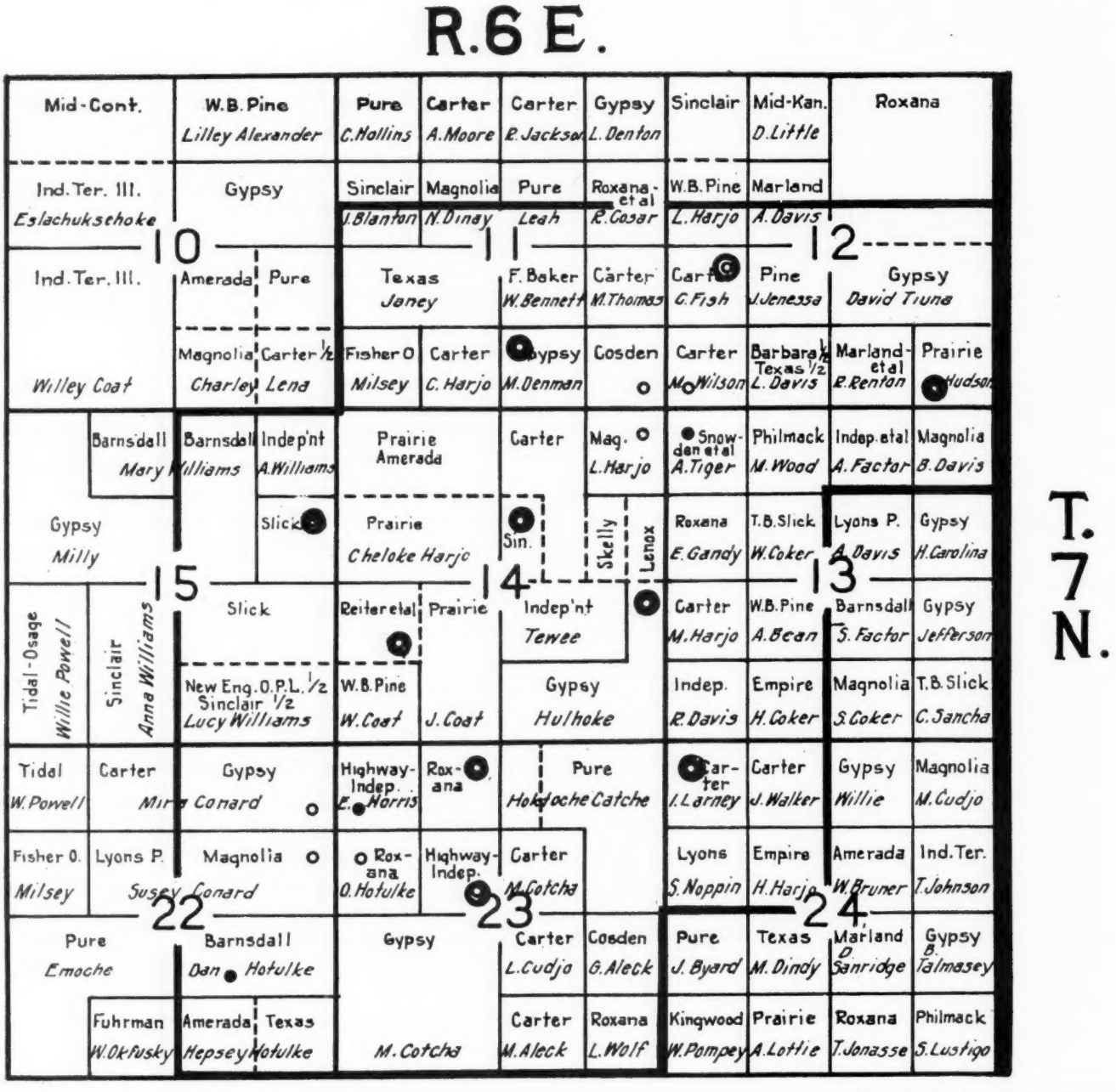
Roxana Petroleum Corp. will test the NE NE NW of Sec. 23, being assured of $10,000 each from the Prairie and the Gypsy and $7,500 from the Barnsdall Oil Co., which has only 20 acres to the east.

A test is to be drilled by the Independent Oil & Gas Co. in the SE NW of Sec. 23, with full amounts being contributed by the Gypsy for one offset and the Carter for two.

Carter Oil Co. will drill in the NW NW of Sec. 24 and standard contributions will be made for dry hole by the Gypsy, Independent and Pure.

Prairie will test the SW SE SE of Sec. 12, where offsets are owned by Marland, Magnolia and Independent.

A tenth test may be drilled, but



this has not been decided definitely. This is shown on the map in the NE NW SW of Sec. 12, on Carter Oil Co. acreage.

While the agreement has effective date of March 1, none of the tests was ready to start. Material is now being moved in and the umpire has received most of the "dry hole letters" from the companies, pledging themselves to pay the assessed amounts.

No wells other than the test wells and the offsets to the two producing wells in the area are to be started for 75 days after March 1, or to May 15. As each test is drilled in it is given three days to complete, at the end of which time it shall be shut in to 50 barrels per day until the first of the second crop of wells that may be drilled is in, when all of the test wells may be opened full. Thus the company which drills the test well waives discovery rights, the compensation for this action being the pledge of partial reimbursement for drilling a dry hole.

At the end of the 75-day period anyone can start as many wells as he likes. There should be several completions of test wells in that period and, assuming that it will require 60 days for the first of the second crop to drill, it will be 135 days from March 1 before the area is opened to production.

With respect to the two producing wells in the area, the same agreement contained a paragraph. They were opened to full production on March 1 and will continue so until an offset is completed, when both the producer that is offset and the offset itself will be shut in to 50 barrels per day until the whole area is turned loose by the completion of one of the second crop of wells.

In waiving discovery rights on the test wells, another step is taken away from the big race that is usually on to get all the oil possible before the neighbor can get any. An executive of one of the major operators asserted that, in the future, every contract he signs to contribute "dry hole money" will have to carry such waiver of discovery.

While it is true that the agreement was reached in part because of the feeling that the area will contain many disappointments, it is no more uncertain than many another virgin wildcat play and the discussion has already been started on establishing such a plan in Twp. 8-5, west of Bowlegs, and other areas. A more orderly testing of an area with material reduction of risk to all concerned would be provided, and, as drilling depths are constantly increasing, it is looked upon as the plan that ultimately will be in widespread use.

Snowden & McSweeney's No. 1 Tiger, in 13-7-6, a Wildcat producer in the area to be cooperatively tested

Oklahoma Natural Gas Issue More Bonds

NEW YORK, March 1.—Oklahoma Natural Gas Corp. has issued $14,000,000 5 per cent 20-year first mortgage bonds through a syndicate consisting of G. L. Ohrstrom & Co., Inc.; Halsey, Stuart & Co.; Graham, Parson & Co.; Blyth Witter & Co.; Coffin Burry, Inc., and Shields & Co. Price was 96¼ to yield more than 5.30 per cent.

Oklahoma Natural Gas Corp., or its predecessor companies, has been operating gas utility properties successfully for the last 20 years. Gas sales of the properties in 1927 exceeded 44,100,000,000 cubic feet, of which about 99 per cent was delivered to consumers through lines now owned or presently to be acquired.

This issue, together with the $12,620,000 bonds of Series A now outstanding, constituting the only funded indebtedness of the corporation, are secured by a direct first mortgage on all of the physical properties now owned and presently to be acquired by the corporation. The depreciated reproduction value of the properties, plus the actual cost of recently constructed properties, improvements and additions, is appraised by independent engineers at $52,900,000 as compared with $26,620,000 principal amount of first mortgage bonds now and presently to be outstanding; in this valuation only about $6,400,000 has been included for the value of the corporation's gas holdings, consisting of gas acreage, leaseholds and valuable gas purchase contracts.

Spring Convention for N. I. O. M. A.

LINCOLN, Neb., March 3.—The directors of the Nebraska Independent Oil Men's Association have decided to have a spring convention of the N. I. O. M. A. as a regular event. Heretofore the state meetings have been held only once a year and several regional meetings between times. The 1928 spring meeting will be held on April 18 and 19 at Kearney, Neb.

Late Tank Wagon Change

NEW YORK—Tank wagon and service station prices of gasoline were advanced 2 cents at Albany by the Standard Oil Co. of New York on March 5, making new prices 17 cents and 19 cents, respectively.

Six New Articles on Accounting for Oil Merchandising Companies Methods to be Used Described, Forms for Records Given

SO MANY calls are made on NATIONAL PETROLEUM NEWS for forms for records and information on cost accounting and cost analyzing for the small oil marketing company, that a series of six special articles on this subject has been prepared.

The series will start in its March 14 Better Merchandising Issue.

The author is Frank H. Emig, who wrote the series on bulk and service station accounting which created such great interest when it appeared in NATIONAL PETROLEUM NEWS a few years ago that the supply was quickly exhausted when republished in book form.

Since he wrote this first series Mr. Emig has had additional experience in systematizing oil marketing businesses.

The present series will include reports from service stations and bulk stations, sales sheets, stock records, classification of accounts, balance sheet, and other office records and complete discussion of their use and purpose in oil merchandising company operations.

Koehne Photo.

Phil. Graver Appointed Park Commissioner

CHICAGO, March 3.—Philip S. Graver, president of the Graver Corp., South Chicago, Ind., manufacturers of tanks and refinery process equipment for the petroleum industry has been distinguished with a position of civic responsibility in Chicago. He was made South Park Commissioner on March 1.

The South Park Commission is composed of seven members. They are appointed by the municipal judges of Chicago. There are three such commissions in the city, each with jurisdiction over matters of public improvements in their respective sections of town. The South Park Commission has charge of practically everything south of Randolph street, including the projected artificial island landing field and the grounds of the 1933 Worlds Fair.

Safety Training Saved More Than 100 Lives

Staff Special

TULSA, March 5.—New first aid training methods of the U. S. Bureau of Mines were explained to 23 safety directors of Mid-Continent oil companies at the regular bi-monthly conference of the Petroleum Safety Council here on Feb. 24. Under the new plan the bureau is training men by companies in so far as possible rather than by districts with students from many companies.

The safety directors laid plans for the annual first aid meet for this year. It will be held in the fall, probably at Tulsa, but not as an adjunct to some other meeting. Last year the meet was held in connection with the Petroleum Exposition and the competing teams were badly crowded in their work, due to the small quarters available.

It is the opinion of the council that the first aid meets are of such importance that they should be held independently under the most favorable conditions. It is pointed out that in the past year more than 100 lives have been saved as a result of the safety movement.

Problems to be solved at the coming fall meet will be available at the offices of the council by April 1, and will be sent to all interested teams by Director Don J. Wallace. This year no Bureau of Mines trainers will be permitted to work with competing teams for at least four weeks before the meet.

The safety men at the conference came from companies throughout the northern section of the Mid-Continent field. They were entertained at lunch by C. L. Swim, safety director for the Skelly Oil Co.

Emerson Spear, vice president of the Pacific Wire Rope Co., was recently appointed by Mayor Cryer of Los Angeles, to succeed O. M. Soudin, resigned, as a member of the board of harbor commissioners.

E. O. BENNETT
Chief production engineer, Marland Oil Co., Fort Worth, new vice chairman for production engineering of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers

Exhibitors Hold Meeting At A.O.M.A. Convention

CHICAGO, March 3.—John A. Cadle, president of the National Oil Equipment and Exhibitors' association, 104 S. Michigan avenue, has announced a meeting of its members (which embraces all manufacturers and jobbers of oil handling equipment who ever exhibit at conventions) on the second day of the coming meeting of the American Oil Men's Association at the Stevens hotel.

The A. O. M. A. meeting is March 6, 7 and 8. The exhibitors will get together at 2 o'clock p. m. on Wednesday, March 7.

LOS ANGELES, Calif., March 1.—Tony Statts, who has spent the past three years in Venezuela selling equipment to the oil companies in that country, spent most of February in California. Mr. Statts hereafter will represent the Fluid Packed Pump Co. in Venezuela.

Refiner Urged to Base Runs on Amount Of Gasoline He Can Sell at Profit

By J. C. Chatfield
N. P. N. STAFF WRITER

KANSAS CITY, March 6. THE ability of his customers to buy and consume the gasoline produced should be the factor guiding a refiner in making up his manufacturing schedules. The availability of ample raw material for his stills should not influence gasoline production if a profit is to be made, according to the report of the special marketing committee of the Western Petroleum Refiners Association, submitted to the annual meeting today by Chairman C. L. Henderson, vice president of the Vickers Petroleum Co.

The committee recommended that budgets for operations or sales quotas be abandoned if they cannot be made flexible enough to meet emergencies. Conditions in the industry change so rapidly that a more or less fixed sales quota will spell disaster for the company whose executives insist upon adherence to its figures when consuming demand is not adequate.

"Responsibility for our ills, or at least our failure to attempt a cure, often rests with those executives who place personal wishes on a higher plane than economic laws, fail to realize that supply affects financial statements, or continually believe the reported market price, or a little less, is an acceptable index to the current value of refinery output," the report said.

Refiner Must Know Market

IN ORDER intelligently to fix manufacturing schedules the refiner must have accurate knowledge of the extent of his market, the committee suggested. It pointed out that both manufacturing and price policies must be influenced by the actions of competitors seeking the same business and that the refiner must determine how much gasoline he can sell at a fair price in the face of the actual competition his salesmen must encounter.

"It has been said often that a very few cars will break the market," the report said. "The committee feels that there is considerable truth in such a statement.

"The open market, and particularly that for the basic grade of product, really is much smaller than is usually appreciated, and hence, more susceptible to the influence of adverse sales.

"In such a situation the dumping of even a few cars is multiplied in importance by the fact that they are often offered to a number of prospective buyers and the subsequent use of these offers as a leverage to reduce the general market to a corresponding level.

Errors in Executive Judgment

PROBABLY companies engaged in this character of transaction fail to realize the full effect of these scattered sales on the prosperity of the industry as a whole, and consequently on their own individual welfare.

"In viewing sales of this description, regardless of whether the immediate cause can be ascribed to lack of judgment, cash, tankage or intestinal fortitude, the actual cause must always rest with errors of executive judgment that permitted the development of a situation that made these sales either advisable or necessary.

High Spots in Marketing Committee Report

Here are salient points in the report of the special marketing committee of the Western Petroleum Refiners Association:

Amount of crude available should not influence refiners' running schedule.

Refiners fight very little to keep prices up while buyers fight to depress the market.

U. S. Motor, 58-60, still largest selling grade of gasoline.

Open market sales in December were only 17 per cent of movement from Group 3.

Future probably will see changes in descriptions of gasoline marketed.

Refiners might do some research work toward standardizing grades as to volatility and antiknock properties.

Many refiners fail to appreciate the effect of selling even a few cars at low prices.

Refiners need not lose money because of overproduction of crude.

"There is no question regarding the influence of the actual price at which sales are made on the prices of the immediate future. Replies to the questionnaire sent out by the committee reporting to you a year ago indicated that refiners were governed to a large extent by reported prices on closed transactions in determining the current price.

"It will be seen, therefore, that there is little beyond the competition of buyers in their purchasing activities to advance the open market while the pricing policies of refiners, influenced by whatever unfortunate sales develop, continuously tends to depress the market.

Refiners Fight Little

THE tendency to follow the course of least resistance in sales is important. Refiners appear to offer but slight opposition to price recessions whereas the bitter opposition of the jobbing trade must be overcome in an advancing market.

We have called attention to the relatively small number of sales that really constitute the open market. The committee, of course, has no figures that definitely fix the gallonage of this market. We do have, however, sufficient information to enable us to form an opinion that can not be far in error. Daily reports of the Oilgram disclose that during last December Oklahoma refiners representing 81.8 per cent of the total of the state sold 1,643 cars of all grades of gasoline on the spot market while during the same month Kansas refiners having 58 per cent of the capacity of that state sold 738 cars.

"If the sales of those reporting companies are accepted as typical of the sales of other companies it can be assumed that all refineries of Oklahoma sold 2,009 cars, and all refineries of Kansas sold 1,272 cars, making a total of 3,281 cars sold on the spot or open market by the combined plants of the two states.

"The capacity of the average car is somewhat less than 9,000 gallons and on this basis the sale of the total number of cars mentioned would involve the shipment of 29,529,000 gallons. Probably this figure can be accepted as a reasonable estimate of the maximum extent of the open market for all grades of gasoline at

ROY B. JONES

the Oklahoma-Kansas group of plants during December.

Open Market Small

IN COMPARISON with this quantity reports of the government show a total movement of 173,670,000 gallons of gasoline from these refineries. The open market, including both domestic and export goods, might therefore be assumed to represent about 17 per cent, as a maximum, for the month in question. Adopting the same method of calculation spot sales of 58-60, 437 U. S. Motor from all plants of the two states would be estimated at 831 cars or 7,479,000 gallons.

"This small amount is equal to but 4.3 per cent of total shipments of all grades of gasoline which, as previously mentioned, aggregated 173,670,000 gallons. Both of these percentages will vary somewhat from month to month and December is used for the purpose of illustration only by reason of the fact that it is the latest month for which government figures are available as the committee prepares this report.

While a great many grades of gasoline are reported and sold on the open market, the grade sold in the greatest volume at the present time is 58-60, 437 U. S. Motor and the bulk of sales comes within the scope of a comparatively limited number of descriptions. For example, during December, out of every 100 cars reported by the Oilgram as sold on the spot market 25 were 58-60, 437 U. S. Motor, 18 were 64-66, 375 endpoint, 14 were 60-62, 437 endpoint, 14 were 60-62, 400 endpoint, and 8 were 68-70, 350 to 360 endpoint.

"From this it will be seen that but five grades of product as now described represented approximately 80 per cent of the open market sales, while 58-60, 437 U. S. Motor is the grade of greatest sale in this market and therefore properly accepted as a standard for either variations in value between grades or the determination of a normal gasoline price.

WHILE percentages of the total open market represented by different grades will vary from month to month and will be affected to some extent by the changing seasons, the price of natural, consumers desires, or other causes, we believe that if a normal price for the quality in greatest demand prevails, refiners will have little cause for worry over the relationship of prices between grades, just as we believe that if normal prices prevail in the open market refiners will have little cause for worry with respect to the price at which gasoline will be sold on contract or through their stations.

"It does seem probable, however, that the future will see some changes in the descriptions of marketed gasoline. Gravity and endpoint have lost some significance as indices to value, while volatility, distillation curves, and anti-knock characteristics have assumed additional importance. It might be well for refiners to conduct some research with respect to quality and be prepared for some standardization of grades in accordance with values determined by both the market and the actual consumption of the product."

THE Committee referred to the fact that Platt's Oilgram and NATIONAL PETROLEUM NEWS adopted a policy of reporting a weighted average price for four grades of gasoline in the Mid-Continent field on Feb. 1, replacing former estimates of the market which usually showed a range of price rather than a single figure. "Certainly the fluctuations from day to day, clearly apparent under the decimal system, should suggest the advisability of reducing the influence of closed transactions on the price applied to current sales. therefore, more attention may be directed to the price which should be received," said the report.

"We recommend that refiners support all trade publications that wish to substitute a weighted average for a range of prices in market reports."

The committee urged that refiners inform themselves thoroughly about the nature of any market which may affect the prices they are to receive for their own goods. It pointed out that some contracts now in force reflect a Group 3 price that is really based on goods originating in other districts. The practice of selling a few cars at cut prices and depending on the law of averages to bring up the price was criticized.

IT SEEMS probable that many refiners must have a distorted conception of the ultimate effect of their transactions or an inadequate idea of the importance of the open market," the committee said.

"Those who sell on such a market are naturally directly affected by its prices; those who sell on contract are, indirectly, but little less immune from its influence on their profits; while even those who sell through stations might well bear in mind the price-wars and increased competition made possible by its all too frequent periods of depression and again recall the drastic reductions in service station prices that occurred when integrated price posters lost faith in the ability of refiners to maintain the tank car price at a profitable level."

The committee took the position in

Roy B. Jones New President Of Western Refiners

KANSAS CITY, March 6

ROY B. JONES, president of the Panhandle Refining Co., Wichita Falls, was elected president of the Western Petroleum Refiners Association at the annual meeting held here today. He succeeds P. M. Miskell, vice president of the Empire Oil & Refining Co., who has headed the organization for the past two years.

E. W. Goebel, general manager of the Manhattan Oil Co., Kansas City, was elected first vice president, M. J. Grogan, vice president of the Louisiana Oil Refining Corp., Shreveport, was made second vice president and George D. Locke, vice president of the Barnsdall Refineries, Inc., was selected as third vice president.

By-laws of the association were revised at the meeting, reducing the number of directors to 21. Those elected to serve during the coming year include John Mc. E. Ames, Kanotex Refining Co., Arkansas City, Kansas; H. T. Ashton, Lubrite Refining Co., St. Louis; D. E. Buchanan, Chestnut & Smith Corp., Tulsa; F. W. Burford, Crystal Oil & Refining Co., Shreveport; Sheldon Clarke, Sinclair Refining Co., Chicago; Sam C. Collins, Marland Refining Co., Ponca City; L. R. Crawford, Producers & Refiners Corp., Independence, Kansas; A. L. Derby, Derby Oil Co., Wichita; T. T. Eason, Bolene Refining Co., Enid; A. F. Garrett, Tidal Refining Co., Tulsa; R. R. Irwin, White Eagle Oil & Refining Co., Kansas City; E. D. Levy, Pierce Petroleum Corp., St. Louis; E. K. Marston, Texas Pacific Coal & Oil Co., Fort Worth; B. McCammon, Transcontinental Oil Co., Tulsa; I. H. Patton, Western Oil Corp., Tulsa; R. B. Pringle, Independent Oil & Gas Co., Tulsa; D. P. Hamilton, Root Refineries Inc., Shreveport; C. L. Henderson, Vickers Petroleum Co., Wichita; F. Godber, Roxana Petroleum Corp., St. Louis and W. M. Davis, Phillips Petroleum Co., Bartlesville. Past presidents of the organization were made members of the board under the new by-laws as were the officers at present.

In his annual address to the association, retiring President Miskell warned the refiners that although gasoline taxes do not seem burdensome on current low retail markets it is quite likely that they may be a real menace in the future. When gasoline markets rise to a point where the tax must be added to a retail price of 20 to 25 cents per gallon he predicted that the added tax burden would serve materially to reduce consumption.

He reported that the association now has 70 member companies, the largest in its history controlling 80 per cent of the manufacturing capacity of the Mid-Continent and gave much credit to the work of Howard Bennette, managing director and his staff. Mr. Miskell was presented with a grand piano by the association members in recognition of his services during the past two years.

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its report that it is not necessary that refiners lose money on their operations merely because there is an overproduction of crude oil. In 1925 refiners had high priced crude and made money part of the time and lost money part of the time. The same was true in 1926. "In 1927 when a low price for crude prevailed, and at an unchanged level for the longest period, with but one exception, in the entire history of Mid-Continent refining, gasoline sold at a profitable level in July, then dropped to unprofitable levels on the same raw material costs.

"The theory has been advanced that overproduction of gasoline and crude run hand-in-hand. The committee recognizes that when overproduction of crude exists pressure is often brought to bear upon refiners to use more crude than refiners' judgment would consider advisable from the standpoint of a manufacturer, however, in many instances experience places the burden for an overproduction of gasoline on the shoulders of refiners.

"Consider for example the past two years. During 1926 there was a draft on crude stocks for both the country as a whole and the Mid-Continent. During 1927, the situation was entirely different and vast quantities of crude oil were added to our stored supply. In 1926, crude demand exceeded our supply and in 1927 crude supply exceeded our demand, however, with respect to gasoline production in comparison with demand there is but slight difference disclosed by the history of these years.

"There is just one more thing we wish to say. The price line does not always respond to the influence of conservative operations but immediately responds to the influence of adverse operations. The fact that it is easy to tear down a market and hard to build it up suggests many things. Principally, however, it suggests a positive necessity for weighing the ultimate effect of individual actions on the market."

Members of the committee in addition to Mr. Henderson were D. W. Moffitt, vice president of the Mid-Continent Petroleum Corp., and L. R. Crawford, vice president of the Producers & Refiners Corp.

Minnesota Jobbers Meet Next Week

MINNEAPOLIS, March 5. — Six speakers, well known to oil jobbers throughout the country, have been chosen to address the Minnesota jobbers who will meet in annual convention on March 14 and 15 at the Hotel Radisson here.

These speakers and their subjects are:

R. B. White, Valvoline Oil Co., "A Lubrication Catechism"; M. L. Long, secretary, Iowa Independent Oil Men's Association; Charles M. Sutherland, secretary, Nebraska Independent Oil Men's Association; Howard Bennette, managing director, Western Petroleum Refiners Association; B. L. Majewski, general sales manager, Shaffer Oil & Refining Co., "Follies of 1927"; and D. E. Montgomery, Department of Markets, Madison, Wisc., on "Changing Ideas of Competition in the Retail Oil Business."

In addition, a representative of the McLaughlin-Noreen Co., will speak on "Profits"; and a prominent oil man will discuss "State Taxation."

"The Story of Petroleum" and "The Story of Gasoline" will be unfolded on the screen.

Election of officers will take place the afternoon of March 15.

TULSA, March 3.—Prairie Pipe Line Co. reports total shipments through its lines to refineries of 5,006,573 barrels in February, an average of 172,640 barrels per day. In January shipments totaled 5,394,759 barrels, averaging 173,056 barrels daily.

Cracking Suit Hearing Starts

CLEVELAND, March 5.—Hearing of the suit brought by The Texas Co. against Warner-Quinlan Co. charging patent infringement, began today in the federal district court at Newark, N. J., before Judge Runyon. The petition charges that by using the Dubbs cracking process the Warner-Quinlan Co. is infringing patents owned by The Texas Co. covering the Holmes-Manley cracking process.

Correction

New prices of Pennsylvania petrolatums as of March 5, are instead of those published on page 125 of this issue, as follows:

Snow white	8.375
Lily white	7.375
Cream white	6.375
Light Amber	3.50
Amber	3.25
Red	2.75
Green No. 5 color	2.25

J. J. McGraw, Tulsa Leader, Dies Suddenly on Vacation

Staff Special
TULSA, March 3

JAMES JOSEPH McGRAW, president of the Exchange National Bank of Tulsa and a prominent figure in oil, banking and political activities of Oklahoma for many years, died at Hot Springs on March 3. He was ill only a few days, being stricken with acute indigestion while enjoying a vacation.

Tulsa is mourning the loss of an outstanding leader who only a few weeks ago was voted the most useful citizen of Tulsa in 1927 by the Junior Chamber of Commerce. The oil industry is mourning the loss of a sympathetic banker who as a producer himself knew the problems of the men and companies of this area.

All banks in the city will close Monday for the funeral which is to be held at the Holy Family Catholic church. Many friends of the banker in the oil industry as well as in the general business life of the city will accompany the body by special train to Ponca City where burial will be made.

Mr. McGraw was born at Leavenworth, Kan., on Aug. 21, 1874. He came to Oklahoma with his parents when Kay county was opened to settlement and has maintained his residence at Ponca City and Tulsa since his marriage in 1899. He has been interested in Republican politics for many years, being a close friend of two presidents. From 1916 to 1920 he was Republican national committeeman from Oklahoma.

During the war, McGraw was an ardent worker for the relief of American soldiers in France through the Knights of Columbus. He served that organization in France and was decorated by the French with the cross of the Legion of Honor and by the pope with the order of St. Gregory.

TULSA, March 3.—A. R. Jameson has been transferred from the Chicago offices to the Tulsa offices of the Pure Oil Co., and will handle gasoline and oil sales in the territory served by the company. Harold Moon, who formerly handled this work along with his duties as buyer for the company, hereafter will devote his time to the company's purchases in the Mid-Continent.

JACKSONVILLE, Fla.—B. E. Robertson, who was formerly assistant district manager at Atlanta, Ga. for The Texas Co., has been appointed district manager of northeast Florida, with headquarters at Jacksonville.

J. J. McGRAW

Over Night Mail Service Chicago to Dallas

CHICAGO, March 1.—National Air Transport, Inc., of Chicago will inaugurate night air mail service daily between Chicago and Dallas, Texas, beginning April 1, that will save approximately 24 hours in mail delivery between those points. Several other towns along the route, including those with short rail connections, will save a full business day in delivery, National Air Transport men claim.

The N.A.T. has been operating day planes on the route between Chicago and Dallas for some time, and all the while it has been recognized that night service would be of more value but it had to wait on the construction of lighting equipment along the way. The advantage of night mail service lies in the fact that the plane leaves one city after the close of the business day and arrives at the other one in time for its cargo of mail to go out in the early forenoon deliveries.

TULSA, March 3.—Marland Refining Co. began March 1 to post prices for crude oil in the fields where oil was purchased for the Marland interests by the Kay County Gas Co. The latter company has withdrawn its postings and the Marland Refining Co. will act as the purchaser. The price schedule was unchanged from that posted on Feb. 21 by the Kay County Gas Co.

Nicholas to Quit I.O.M.A. at March Meeting

CHICAGO, March 3.—Members of the Independent Oil Men of America are being advised by official letters from headquarters and postal card announcements that the annual meeting of the organization takes place in Chicago at the Stevens Hotel on March 19, 20 and 21.

The industry in general and particularly the members are looking forward to this meeting with unusual interest because it marks the retirement from official position with the organization of L. V. Nicholas. He has been its active leader since 1922 and before that was president of one of the national associations of marketers from which the National Petroleum Marketers' Association was formed. The N. P. M. A. is the discontinued parent organization from which the I. O. M. A. sprang.

A new president will have to be chosen at this meeting. Inquiry here and there fails to develop any hint of politics in the organization or to hear of any candidate projected to succeed Mr. Nicholas.

All Oil Stocks Gain In January

WASHINGTON, March 5.—Decline of 60,000 barrels per day in crude production in the Seminole area during January was the largest single factor in the country's production, which decreased a total of 1,787,000 barrels from December's output, to 72,321,000 barrels in January, according to U. S. Bureau of Mines.

Crude stocks east of California increased 7,246,000 barrels, standing at 358,892,000 barrels Jan. 31, as compared with 351,646,000 barrels on Dec. 31. Stocks of light crude in California increased for the first time in a year, totaling 20,493,000 barrels Jan. 31. Total crude stocks in California were 114,820,000 barrels, an increase of 2,965,000 barrels from December.

Gasoline production decreased 633,000 barrels during January, to 27,879,000 barrels. Stocks increased 3,800,000 barrels, standing at 36,112,000 barrels on Jan. 31.

Gas and fuel oil stocks increased 171,000 barrels in January, to 123,950,000 barrels, while production decreased 758,000 barrels from December.

Kerosene stocks increased 71,000 barrels and output increased 178,000 barrels. Stocks totaled 7,670,000 barrels on Jan. 31.

Lubricant stocks gained 118,000 barrels, to 7,978,000 barrels in January, while output fell off 143,000 barrels.

On practically Every Highway in U. S. ~Texaco Tank Trucks *and* WHEATON FAUCETS

A Texaco Tank Truck equipped with six Wheaton Type A Faucets. Here is also shown a larger view of this faucet.

THROUGHOUT the country, from ocean to ocean and from the Lakes to the Rio Grande, The Texas Company sends its tank trucks, delivering Texaco Products. Wherever you drive the highways you see those big trucks with the familiar red stars, telling the world who they are. And, if you will look at the rear, you will see a row of Wheaton Faucets—inconspicuous but important.

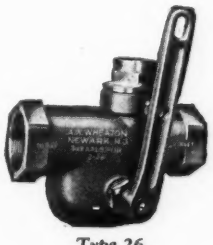
In 1912 The Texas Company ordered one Wheaton Faucet. Then they ordered more—always one at a time. Perhaps 25 went out to as many different points. Tests were made, and managers reported. Wheaton Faucets were elected! And from that time till this, Wheaton has been the standard tank truck faucet equipment throughout that great nation-wide organization.

Sufficient praise indeed!

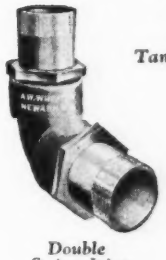
Other Wheaton Products used by The Texas Company include Loading Valves, Swing Joints and Anti-Freeze Valves.

Anti-Freeze Valve

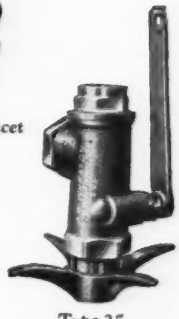
Type 24 Tank Truck Faucet



Type 26 Loading Valve



Double Swing Joint



Type 25 Loading Valve

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended March 2 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Mar. 2	Total Week Ended Feb. 3
Plants Reporting	12	28	27	12	79	79
Crude Capacity (bbls.)	92,000	157,200	104,500	54,900	408,600	408,600
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	122,200
Da. Av. Crude Runs	57,319 + 14.7	100,010 — 8.5	65,681 — 5.7	41,274 — 12.2	264,284 — 4.6	256,716
Da. Av. Other Oils	6,448 — 29.7	199 — 43.8	5,840 + 0.9	1,328 — 21.0	13,815 — 18.7	15,962
GASOLINE—Gallons						
Stocks, Feb. 24	14,209,000	52,684,000	21,620,000	4,075,000	92,588,000	80,895,000
Prod. 2-24 to 3-2	8,510,000 + 1.1	15,120,000 — 8.3	7,160,000 — 6.8	3,686,000 — 7.5	34,476,000 — 5.8	33,326,000
Ship. 2-24 to 3-2	8,160,000 — 0.9	15,105,000 + 4.8	7,161,000 — 4.0	3,836,000 + 20.3	34,252,000 + 2.9	31,036,000
Stocks, Mar. 2	14,559,000 + 1.8	52,699,000 + 0.03	21,619,000 — 0.1	3,925,000 — 3.7	92,802,000 + 0.2	83,185,000
Ratio Sales to Prod.	95.9%	99.9%	100.01%	104.1%	99.4%	93.1%
KEROSENE—Gallons						
Stocks, Feb. 24	3,310,000	7,202,000	1,771,000	478,000	12,761,000	13,939,000
Prod. 2-24 to 3-2	1,826,000 + 34.1	2,695,000 — 7.1	1,375,000 + 0.7	416,000 — 35.7	6,312,000 + 0.6	6,421,000
Ship. 2-24 to 3-2	2,461,000 + 78.3	3,292,000 + 25.7	1,181,000 — 26.0	468,000 — 34.7	7,402,000 + 17.3	7,176,000
Stocks, Mar. 2	2,675,000 — 19.2	6,605,000 — 8.3	1,965,000 + 10.9	426,000 — 10.9	11,671,000 — 8.5	13,184,000
Ratio Sales to Prod.	134.8%	122.1%	85.9%	112.5%	117.3%	111.8%
STOVE DISTILLATE—Gallons						
Stocks, Feb. 24	870,000	3,546,000	517,000	69,000	5,002,000	5,673,000
Prod. 2-24 to 3-2	277,000 — 37.1	579,000 — 14.5	290,000 + 19.3	105,000 + 17.9	1,251,000 — 13.7	1,333,000
Ship. 2-24 to 3-2	321,000 — 2.7	930,000 + 35.4	317,000 — 22.9	122,000 + 25.8	1,670,000 + 10.8	1,497,000
Stocks, Mar. 2	826,000 — 5.1	3,195,000 — 9.9	490,000 — 5.2	52,000 — 24.6	4,563,000 — 8.8	5,509,000
Ratio Sales to Prod.	115.9%	160.6%	109.3%	116.2%	135.1%	112.3%
GAS OIL—Gallons						
Stocks, Feb. 24	6,707,000	32,454,000	15,369,000	5,913,000	60,443,000	60,787,000
Prod. 2-24 to 3-2	1,493,000 + 16.8	3,081,000 + 68.5	1,610,000 + 87.4	1,890,000 — 17.4	8,074,000 + 29.1	8,193,000
Ship. 2-24 to 3-2	1,482,000 + 47.5	3,236,000 +209.4	1,418,000 + 80.2	1,758,000 — 23.1	7,894,000 + 54.1	9,641,000
Stocks, Mar. 2	6,718,000 + 0.2	32,299,000 — 0.5	15,561,000 + 1.2	6,045,000 + 2.2	60,623,000 + 0.3	59,339,000
Ratio Sales to Prod.	99.3%	105.0%	88.1%	93.0%	97.8%	117.7%
FUEL OIL—Gallons						
Stocks, Feb. 24	9,287,000	29,334,000	36,953,000	14,795,000	90,379,000	93,187,000
Prod. 2-24 to 3-2	6,417,000 + 9.2	6,268,000 — 14.5	8,978,000 — 13.3	5,311,000 — 16.3	25,974,000 — 9.8	24,378,000
Ship. 2-24 to 3-2	5,798,000 — 11.3	7,528,000 — 7.0	8,746,000 — 34.3	5,024,000 + 1.5	27,095,000 — 17.6	26,654,000
Stocks, Mar. 2	9,906,000 + 6.7	28,074,000 — 4.3	37,195,000 + 0.6	15,082,000 + 1.9	90,257,000 — 0.2	90,901,000
Ratio Sales to Prod.	90.4%	120.1%	97.4%	94.6%	103.5%	109.4%

Gasoline Produced by Various Methods, Week Ended March 2

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,389,000	63.3	11,536,000	76.3	5,557,000	77.6	2,105,000	57.1	24,587,000	71.3
Cracked	2,403,000	28.2	2,573,000	17.0	1,291,000	18.0	952,000	25.8	7,219,000	20.9
Natural	718,000	8.5	1,011,000	6.7	312,000	4.4	629,000	17.1	2,670,000	7.8
Total	8,510,000		15,120,000		7,160,000		3,686,000		34,476,000	

+ or — columns are % change from previous week.

Kerosene Shipments Soar; Stocks are Smaller

Staff Special—By Telegraph

TULSA, March 6

AN INCREASE in kerosene shipments of more than 1,125,000 gallons with virtually no change in production was reported for the week ended March 2 by 79 Mid-Continent refineries. Shipments from all reporting plants totaled 7,402,000 gallons. Production was 6,312,000 gallons. Stocks were reduced 1,000,000 gallons.

Stocks of kerosene at all plants March 2 totaled 11,671,000 gallons, compared with 15,202,000 gallons March 4, 1927. Stocks this year are approximately 3,500,000 gallons less than stocks a year ago. In the four weeks from Feb. 2 to March 2, this year, kerosene shipments totaled 27,189,000 gallons and production 25,676,000 gallons. Stocks were reduced 1,513,000 gallons. A year ago pro-

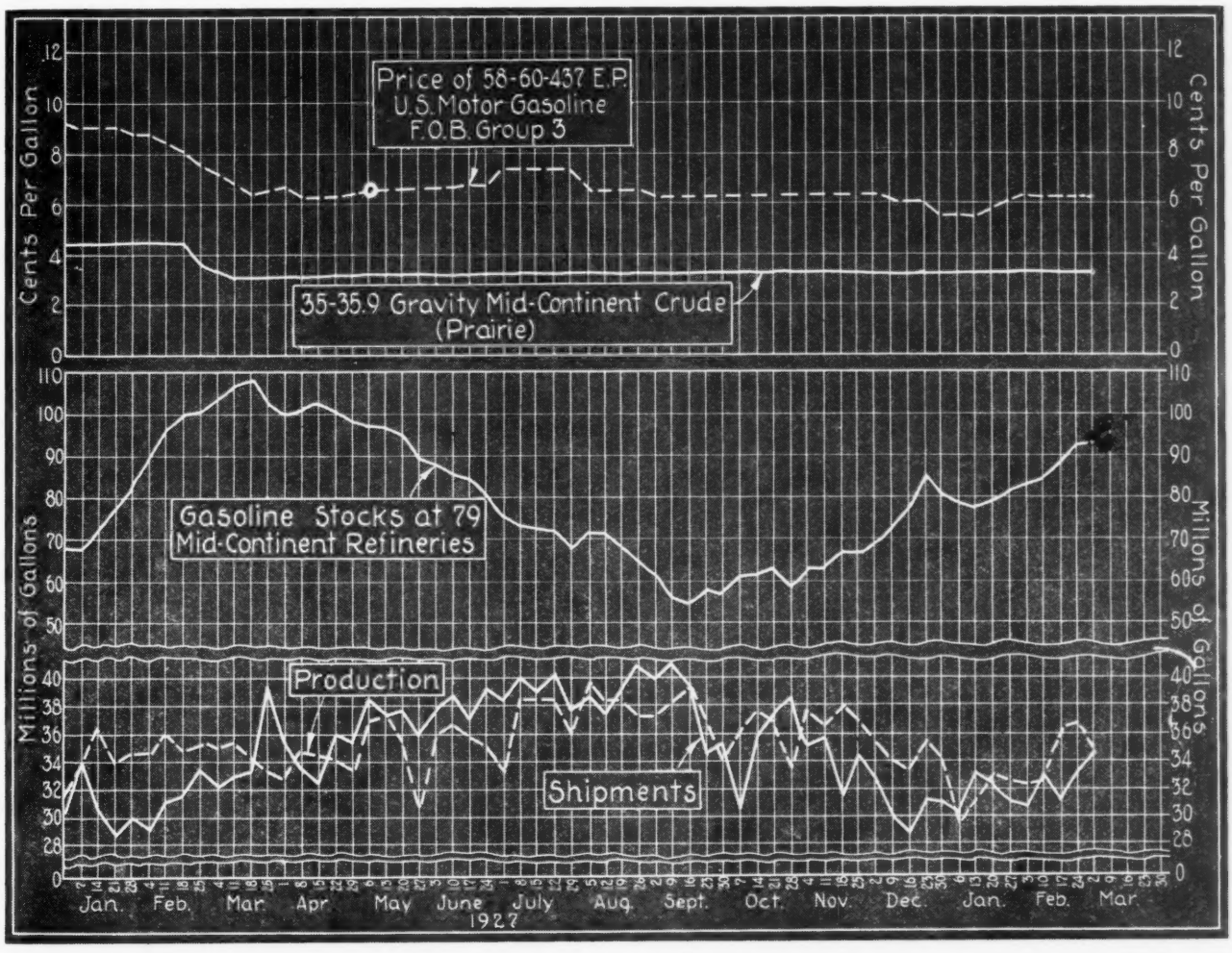
Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Mar. 2. Change in stocks figured from Feb. 3.

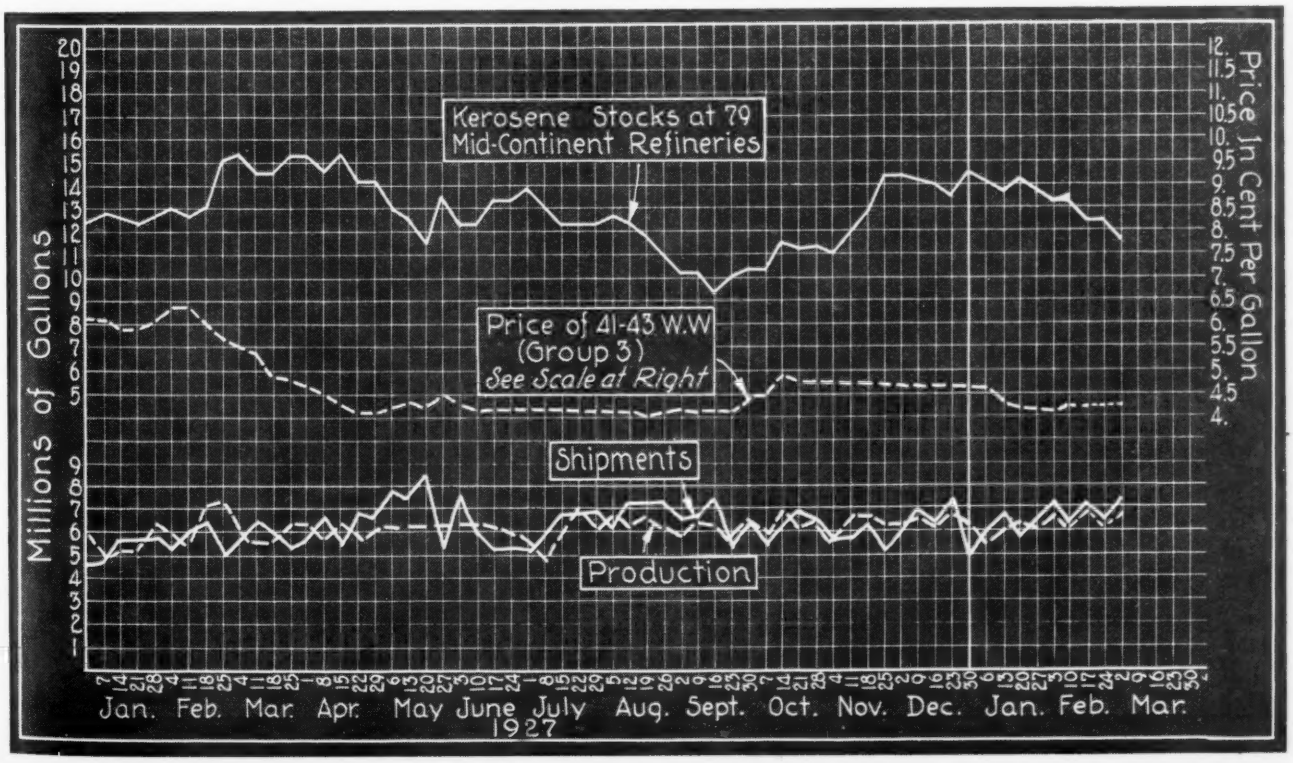
	Gallons
GASOLINE	
Production	140,894,000
Shipments	132,747,000
Net change in stocks	+8,147,000
Ratio sales to production	94.2%
KEROSENE	
Production	25,676,000
Shipments	27,189,000
Net change in stocks	—1,513,000
Ratio sales to production	105.9%
STOVE DISTILLATE	
Production	5,235,000
Shipments	6,181,000
Net change in stocks	—946,000
Ratio sales to production	118.1%
GAS OIL	
Production	25,093,000
Shipments	23,809,000
Net change in stocks	+1,284,000
Ratio sales to production	94.9%
FUEL OIL	
Production	113,764,000
Shipments	114,408,000
Net change in stocks	—644,000
Ratio sales to production	100.6%

Barometer of Mid-Continent Refinery Market—Week Ending March 2

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News

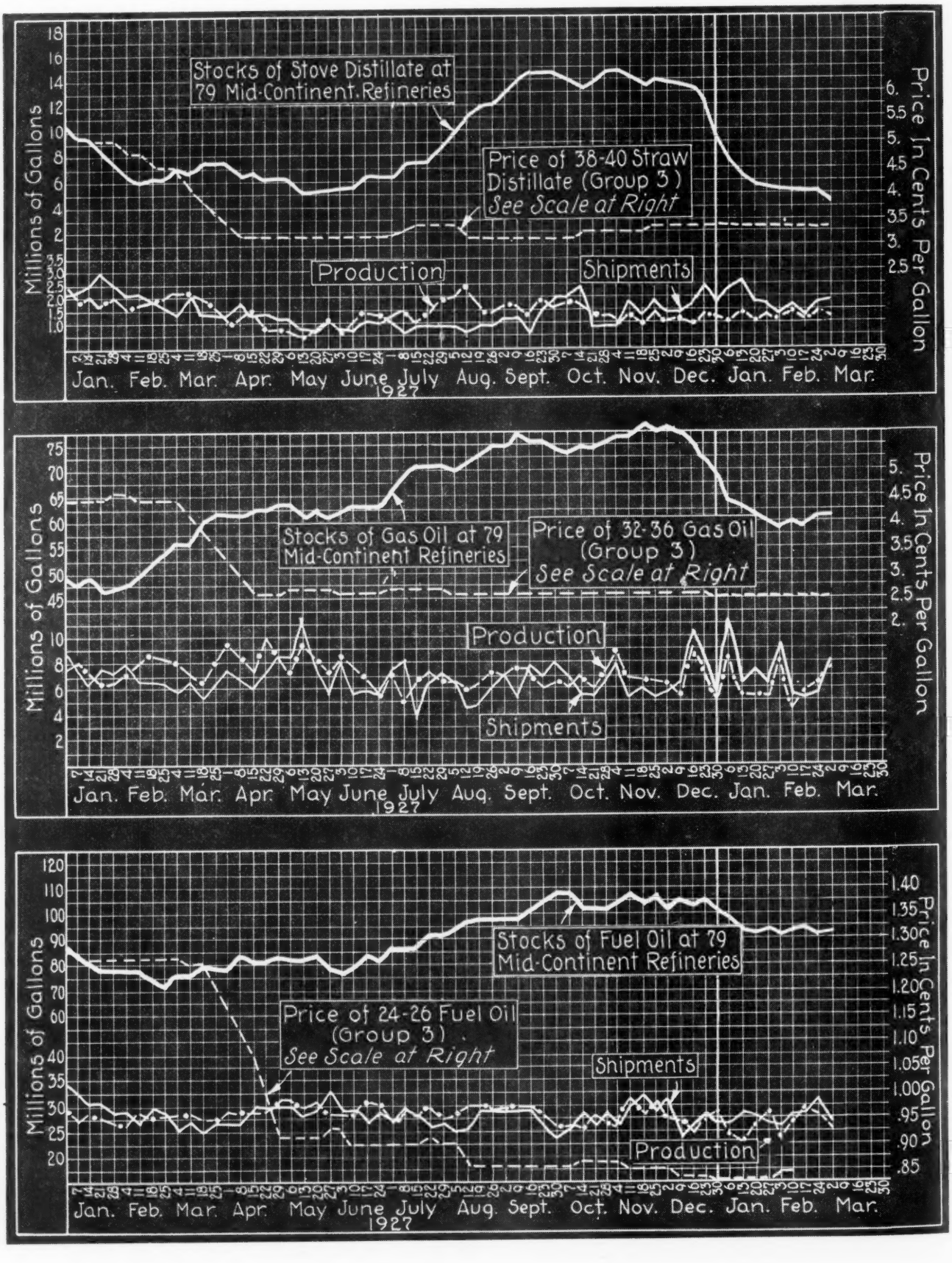

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1927

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page

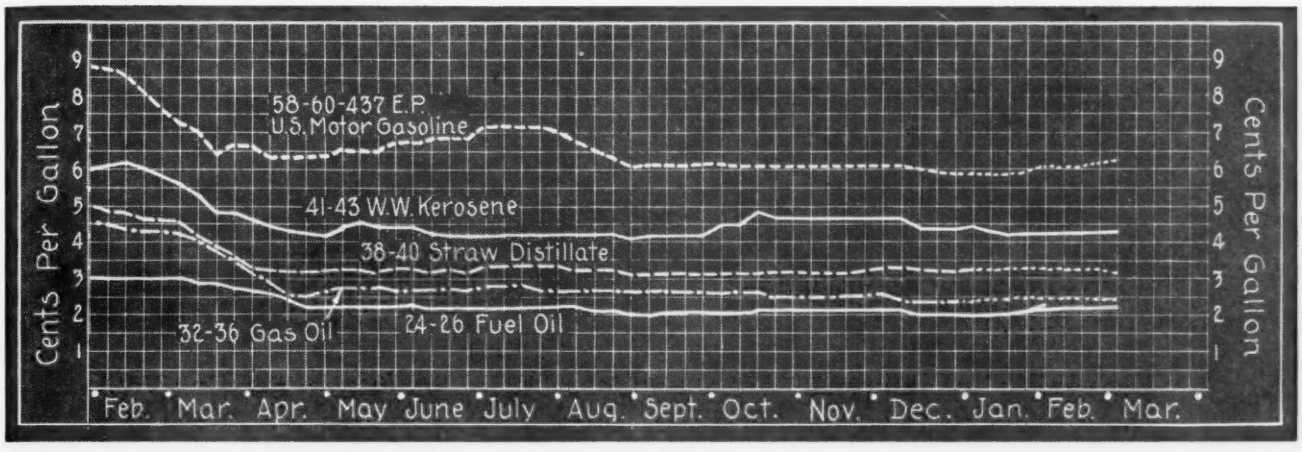

Kerosene Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Price of 41-43 W.W. (Group 3) See Scale at Right
Price In Cent Per Gallon
Shipments
Production
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1927

Barometer of Mid-Continent Refinery Market—Week Ending March 2

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News


Stocks of Stove Distillate at 79 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1927
Stocks of Gas Oil at 79 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1927
Stocks of Fuel Oil at 79 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cents Per Gallon
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1927

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

duction outstripped shipments by 2,146,000 gallons in the corresponding weeks.

Kerosene production in Kansas was increased 400,000 gallons and shipments rose more than 1,000,000 gallons. Oklahoma refiners curtailed production and shipments were up approximately 600,000 gallons. Production in Texas was virtually unchanged and shipments were off a little.

Arkansas-Louisiana refiners reduced kerosene production. Shipments fell but not sufficiently to cause addition to stocks.

Crude charges to stills were reduced 11,765 barrels daily average. Other oil charges were cut over 3,000 barrels. Kansas refiners increased their crude charges 7,000 barrels daily average. Other areas reduced runs.

Gasoline production was reduced more than 2,000,000 gallons. Shipments rose 900,000 gallons to 34,476,000 gallons, the largest since the week ended Dec. 4, 1927.

Increase in crude runs and a slight fall in shipments prevented Kansas refiners from keeping shipments on a level with production.

Oklahoma refiners reduced production while shipments moved up and their ratio of sales to production was 99.9 per cent. Stocks were reduced in Texas and Arkansas-Louisiana districts.

Stove distillate stocks were reduced 430,000 gallons when production was reduced almost 200,000 gallons. Shipments were increased 160,000 gallons.

Gas oil production increased 1,800,000 gallons with all districts except Arkansas-Louisiana participating. Shipments meanwhile were increased 2,700,000 gallons for the field with all districts except Louisiana-Arkansas getting increased business. Stocks were increased nearly 200,000 gallons.

Fuel oil production and shipments both fell, production by 3,000,000 gallons and shipments by 5,000,000 gallons. Shipments were at a level sufficiently high, however, to lower stocks 122,000 gallons.

Gulf Coastal Lube Prices Higher

HOUSTON, March 6.—Bulk cargo inquiries for Gulf Coastal lubricants exerted a stiffening influence on the Houston district markets over the past week. Actual sales were not confirmed, but one cargo was believed to be at the point of shipment.

A shortage of other wanted grades for bulk movement tended also to clear up the price situation affecting them. Spot prices for tank car shipments to jobbers, which had become increasingly firm the past few weeks, showed further strength.

New Gulf Coastal lube prices did not arrive in time to be published in the regular refinery market table at the back of this issue and old prices were used. These are the correct prices, as of March 5:

100 vis. No. 2 color unfiltered pale	7.00- 7.50
200 vis. No. 3 color unfiltered pale	9.50-10.25
300 vis. No. 3 color unfiltered pale	10.50-11.25
500 vis. No. 3½ color unfiltered pale	12.50-13.25
750 vis. No. 4 color unfiltered pale	14.50-15.50
200 vis. No. 5½ color red oil	7.50- 8.25
300 vis. No. 5½ color red oil	8.75- 9.25
500 vis. No. 6 color red oil	10.00-10.50
750 vis. No. 6 color red oil	12.75-13.50

Weighted Average Prices Oklahoma Market

In line with National Petroleum News' new policy of carrying a weighted average price for the four more important Oklahoma gasolines in its market section, these weighted average prices, together with the number of cars of each grade sold, as of Monday, March 5, are published below. The figures are not available for publication in the market refinery table on page 123 of this issue:

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	49	6.2233
60-62, 437 e. p.	23	6.5815
60-62, 400 e. p.	11	6.6764
64-66, 375 e. p.	2	7.1250

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery, in tank car lots.

Hendricks is Extended Mile and Half North

HOUSTON, March 6.—Hendricks field production in Winkler county was extended approximately one and a half miles north when Cranfill & Reynolds completed their No. 1 test, southeast corner of the southeast quarter of the southwest quarter of sec. 33, block B26, public school lands, making estimated initial production of 12,000 barrels daily, based on a 30-minute test. Pay was found at 2735 feet, the lime producing horizon running geologically high as compared with parts of the developed area.

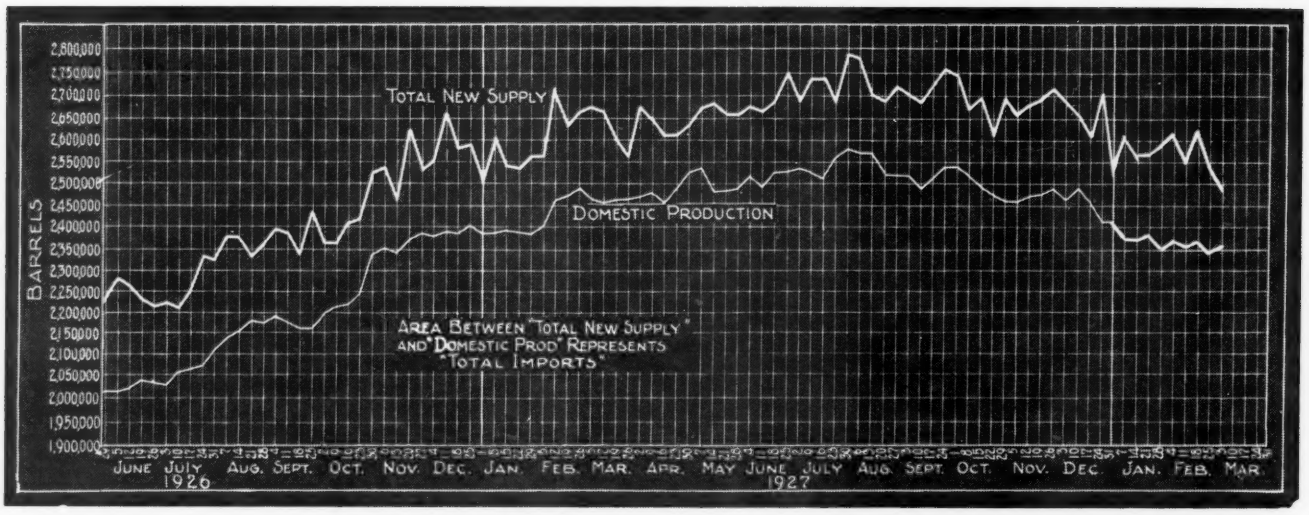
The new well is approximately three and a half miles west of the inland town of Kermit and about the same distance east of north of the field town of Wink.

Completion of the Cranfill & Reynolds well makes the actually productive area of Hendricks field more than five miles long, from north to south.

New Freight Rates Become Effective

TULSA, March 3.—New oil freight rates from the Mid-Continent field to parts of the Standard of Indiana marketing territory went into effect on March 2 as issued by the railroads. Near the end of February seven complaints were filed with the Interstate Commerce Commission asking a suspension of the new rates pending an investigation. Telegrams from Washington to traffic managers here indicate that the commission refused to take the action requested.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Mar. 3	Feb. 25
Production east of Rockies	1,742,350	1,735,250
Increase		7,100
Total production in U. S.	2,356,750	2,349,150
Increase		7,600
Crude oil imports	133,286	186,286
Decrease		53,000
Total crude supply	2,490,036	2,535,436
Decrease		45,400

OKLAHOMA

	Mar. 3	Feb. 25
North Braman	2,850	3,000
South Braman	1,950	1,850
Blackwell	3,800	3,800
Hubbard	2,850	3,000
Thomas	1,600	1,450
Tonkawa	15,300	15,550
Garber	9,950	9,900
Burbank	44,450	44,900
Osage, outside Burbank	29,500	29,500
Watchorn	950	950
Cushing	21,200	21,200
Yale Jennings	8,900	8,900
Davenport	2,350	2,400
Bristow-Slick	24,900	24,900
North Okmulgee	15,750	15,800
Lyons-Deaner	7,400	7,600
Stroud	1,100	1,100
Cromwell	10,100	10,500
Papoose	4,950	5,250
Wewoka	8,150	8,450
Seminole	56,950	56,600
Bowlegs	88,500	88,800
Searight	18,150	18,200
Little River	34,100	33,500
Earlsboro	107,700	109,850
Duncan district	6,600	6,600
Graham	5,750	5,750
Fox	1,700	1,700
Healdton	14,200	14,350
Hewitt	8,800	8,800
Scholem Alechem	12,900	14,400
Others	80,600	80,150
Total, Oklahoma	653,950	658,700
Decrease		4,750

KANSAS

	Mar. 3	Feb. 25
Greenwood County	30,700	30,150
Florence-Covert	1,400	1,450
Peabody-Elbing	3,750	3,750
Eldorado-Towanda	14,250	14,250
Augusta-Fox-Bush	4,200	4,200
Rainbow Bend	1,850	1,850
Russell	3,000	2,950
Churchill	13,100	12,600
Oxford	15,300	14,100
Others	25,200	25,400
Total, Kansas	112,750	110,700
Increase		2,050

NORTH LOUISIANA

	Mar. 3	Feb. 25
Homer	4,400	4,400
Haynesville	6,400	6,400
Caddo, light	11,650	11,250
Caddo, heavy	4,000	3,900
De Soto, Red River	4,200	4,300
Elm Grove	650	550
Bellevue	1,000	1,000
Cotton Valley	4,500	4,500
Urania	7,850	7,950
Pleasant Hill	650	650
Total, North Louisiana	45,300	44,900
Increase		400

ARKANSAS

	Mar. 3	Feb. 25
El Dorado	5,100	5,150
Champagnolle	1,000	1,100
Smackover, light	8,500	8,500
Smackover, heavy	66,950	67,700
Stephens	1,050	1,050
Nevada	1,700	1,800
Lisbon	2,300	2,350
Others	100	100
Total, Arkansas	86,700	87,750
Decrease		1,050

TEXAS (OUTSIDE GULF COAST)

Panhandle District

	Mar. 3	Feb. 25
Hutchinson County	46,200	46,700
Carson County	7,050	7,050
Gray County	18,600	19,050
Wheeler County	950	900
Others	50	50
Total, Panhandle District	72,850	73,750
Decrease		900

North Texas

	Mar. 3	Feb. 25
Burkburnett	12,750	12,600
Electra	11,150	11,000
Iowa Park and K-M-A	1,900	1,900
Wilbarger	10,000	10,250
Archer County	19,250	19,500
Montague-Cooke	12,550	12,700
Others	600	600
Total, North Texas	68,200	68,550
Decrease		350

West Central Texas

	Mar. 3	Feb. 25
Stephens County	7,700	7,650
Eastland-Desdemona	8,500	8,750
Brown County	12,250	12,500
Coleman County	1,550	1,450
Callahan County	4,000	3,850
Shackleford County	6,500	6,350
Young County	8,700	8,950
Throckmorton County	1,050	1,000
Palo Pinto County	500	500
Jack County	1,550	1,500
Others	500	500
Total, West Central Texas	52,800	53,000
Decrease		200

West Texas

	Mar. 3	Feb. 25
Jones County	1,000	1,100
Mitchell and Scurry Counties	3,300	3,300
Howard County	4,200	4,150
Reagan County	19,700	20,000
Crane and Upton Counties	90,500	92,000
Crockett County	2,500	2,600
Pecos County	45,900	46,400
Winkler	136,300	126,000
Others	2,200	2,350
Total, West Texas	305,600	297,900
Increase		7,700

East Central Texas

	Mar. 3	Feb. 25
Mexia	7,350	7,400
Currie	500	500
Richland	500	500
Wortham	1,850	1,900
Corsicana-Powell	11,600	11,800
Nigger Creek	1,300	1,400
Total, East Central Texas	23,100	23,500
Decrease		400

Southwest Texas

	Mar. 3	Feb. 25
Luling	13,700	13,950
Lytton Springs	1,600	1,600
Somerset	800	800
Laredo District	6,500	6,450
Piedras Pintas	.....	.....
Dale	400	400
Others	400	400
Total, Southwest Texas	23,400	23,600
Decrease		200
Total, Texas—(Outside Gulf Coast)	545,950	540,300
Increase		5,650

GULF COAST

Coastal Texas

	Mar. 3	Feb. 25
West Columbia	8,000	8,000
Damon Mound	900	850
Big Creek	2,150	2,000
Poling	2,300	2,500
Blue Ridge	4,150	4,000
Pierce Junction	8,250	8,950
Humble	1,450	1,500
Goose Creek	7,500	7,300
South Liberty	4,000	2,200
Hull	12,000	11,500
Saratoga	1,050	1,050
Batson	1,400	1,350
Barbers' Hill	650	650
Sour Lake	3,400	3,400
Spindletop	34,400	36,700
Orange County	4,400	4,650
Others	3,450	2,500
Total, Coastal Texas	99,450	99,100
Increase		350

Coastal Louisiana

	Mar. 3	Feb. 25
Vinton	4,500	4,600
Lockport	5,200	4,700
Evangeline	950	1,000
Edgerly	1,400	1,500
Others	6,950	3,600
Total, Coastal Louisiana	19,000	15,400
Increase		3,600
Total Gulf Coast	118,450	114,500
Increase		3,950

ROCKY MOUNTAIN

Wyoming

	Mar. 3	Feb. 25
Salt Creek	39,700	37,300
Grass Creek	2,350	2,400
Elk Basin	1,000	1,050
Big Muddy	2,700	2,700
Lost Soldier	2,900	3,200
Rock River	2,650	2,750
Lance Creek	650	600
Teapot Dome	.....	.....
Others	4,000	3,600
Total, Wyoming	55,950	53,600
Increase		2,350

Montana

	Mar. 3	Feb. 25
Cat Creek	1,800	1,800
Sunburst	9,000	9,000
Others	150	150
Total, Montana	10,950	10,950

Colorado

	Mar. 3	Feb. 25
Moffat (Craig)	1,150	1,200
Fort Collins	3,200	3,150
Florence	1,200	1,150
Others	1,700	2,300
Total, Colorado	7,250	7,800
Decrease		550

New Mexico

	Mar. 3	Feb. 25
Table Mesa	.....	250
Artesia	1,250	1,250
Hogback	500	500
Rattlesnake	100	300
Others	250	250
Total, New Mexico	2,100	2,550
Decrease		450
Total, Rocky Mountain	76,250	74,900
Increase		1,350

California

	Mar. 3	Feb. 25
Santa Fe Springs	38,000	38,000
Long Beach	119,000	116,500
Huntington Beach	58,500	58,500
Torrance	19,500	19,500
Dominguez	12,500	12,500
Rosecrans	7,000	7,500
Inglewood	30,000	30,500
Midway-Sunset	79,500	79,500
Ventura Avenue	53,500	54,500
Seal Beach	39,500	39,500
Others	157,400	157,400
Total California	614,400	613,900
Increase		500

Eastern

	Mar. 3	Feb. 25
(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	103,000	103,500
Decrease		500

Little River District Wildcats Prove Substantial When Opened

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, March 3

SPECULATIVE interest at the beginning of last week concerned two wildcat wells south of the Little River field.

These had been shut in to 100 barrels per day since their completion several weeks ago. March 1 was the date for opening them to full production. By the end of the week it was established that both were good producers and openers of a pool or pools of some caliber.

Snowden & McSweeney's No. 1 Tiger, NW corner of 13-7-6, was opened March 1 and swabbed and flowed 605 barrels in the ensuing 24 hours. It was deepened at the start 2 feet to total depth of 4317½ feet. The pay had barely been scratched when it was originally shut in. The afternoon of March 2 the well was flowing 90 barrels per hour. The well showed a little water when first opened but this was soon exhausted and it was thought to be coming from the above pay.

This well is about a mile from nearest production, which is in the southern extension to the Little River pool. Under the new plan worked out by the operators, described elsewhere in this issue, offsets to this well will be drilled at once, Magnolia Petroleum had put up derrick for the west offset during the shutdown period, but showed a willingness to give everybody an even start and to permit Snowden & McSweeney to get a little return for remaining shut in so long. Magnolia will not spud its well until March 10. This is merely another manifestation of the give and take spirit which now dominates Seminole operations.

THE other prominent wildcat was that of the Independent Oil & Gas Co., in the SW NW NW of 23-7-6, a mile south and a mile west of the Snowden & McSweeney well. It also had been shut in for several weeks, producing 100 barrels daily. When opened it made 2,064 barrels in 24 hours. The offsets to this will be drilled as soon as they can be started.

Three-quarters of a mile southwest the Barnsdall Oil Co. recently completed a Wilcox sand failure, so the territory isn't causing any scares. It is figured to be of the Little River type, which has not measured up to original expectations.

In the south end of Little River a restrictive agreement that was in effect also expired March 1. Carter Oil Co.'s No. 1 Jackson, NE NW NE of 11-7-6, was opened and made maximum of 1,080 barrels on gas lift. Offisets to this have been shut downs, but will now be drilled.

The Seminole district came perilously near to dropping under the 300,000-barrel figure, but it rallied owing to the opening of the shutdown wells. It is not expected to hold above that figure for long.

In the Osage the Kay County Gas Co.'s two wildcat oil wells will have an effect on the sale of oil leases announced Friday for March 28 and 29. At this sale 92,229.67 acres will be offered for sale.

One of the Kay County's wells is in the NE SW of 22-24-7E. It made 1070 barrels in 16 hours against 90 pounds back pressure and is rated as good for 1500 barrels. Its total depth is 2899 feet and production is from the Siliceous lime, a horizon lower than the Wilcox.

THE other well is in the SW SE SE of 9-23-7E. It had top of the pay at 2944 and was drilled to 2989 feet. It has not been produced to capacity but probably will make upward of 1,000 barrels when completed.

Both wells are in wildcat territory and both discovery tracts will be up at the next sale, as the Kay County company has only gas rights on the tracts. The purchaser will reimburse the Kay County for drilling the well. It is the privilege of the discoverer to produce the wells until the tracts are sold, getting the full working interest in the oil so produced, but it is understood that the Kay County will produce just enough to keep the wells alive.

New territory was opened in Butler county, Kans., a short time ago when the Empire Gas & Fuel Co. drilled into Bartlesville sand production in No. 1 Cranston, east of the town of Haverhill. The well is in the SE NW SE of 22-27-5. Sand was found at 2712-44 feet and initial production was 540 barrels. While there are dry holes in two directions in less than a half mile, it probably opens another of the prolific "shoestring" sand pools for which this part of Kansas is famous.

Gulf Gets Second Well on Waddell Ranch

HOUSTON, March 2.—A second producing well in its unit-controlled Waddell ranch field, northeastern Crane county, Texas, has been brought in by the Gulf Production Co. It is No. 3, in sec. 3, block B-25, three-quarters of a mile north of the No. 2 discovery well in sec. 10.

The No. 3 well bailed 125 barrels of pipeline oil in 24 hours after a 20-quart shot of nitro-glycerin in the lime pay horizon at 3245-3309 feet. The No. 2 discovery, which came in several months ago, makes about 30 barrels daily by heads when open. It found the pay at 3219 feet, was drilled to 3519 feet and then plugged back to 3499 feet after getting sulfur water at the total depth recorded.

No. 1, which was drilled in sec. 12, was put down when the Gulf originally made diamond core tests in the general Waddell area. It was plugged and abandoned at about 2100 feet without effort to make a deep test.

First production from the No. 2 discovery well dates from September of last year.

Above-sea-level elevations of the three tests range from 2724 to 2741 feet. Top of the Permian salt bedding ranges from 1170 to 1290 feet, drilling depth. In the No. 2 well the brown and white lime formations were found, respectively, at about 3100 and 3175 feet.

Waddell ranch production, about eight miles northwest of the University (Church & Fields) pool, is inside a solidly held 59-section block of the Gulf. In this respect it is similar to the Gulf's 27-section McElroy ranch development, which adjoins University field on the south.

Seminole District Production by Companies and Leases, February 29 and February 24, 1928

BOWLEGS

Company	Farm	S.T.R.	Feb. 29 Wells	Feb. 29 Prod.	Feb. 24 Wells	Feb. 24 Prod.
Amerada	Rascoe	15- 8-6	8	2,250	8	2,395
Atlantic	Baker	1- 8-6	4	625	4	650
Atlantic	Fleet	23- 8-6	4	485	4	515
Atlantic	Grayson	21- 8-6	3	844	3	984
Atlantic	A. Jones	10- 8-6	3	105	3	117
Atlantic	C. Jones	9- 8-6	2	295	2	214
Total Atlantic			16	2,354	16	2,480
Barnsdall	McNac	28- 8-6	1	30	1	30
Barnsdall	Murrow	11- 8-6	4	784	4	676
Total Barnsdall			5	814	5	696
Carter	Bowlegs	15- 8-6	4	1,440	4	1,150
Carter	Burden	23- 8-6	3	300	3	330
Carter	Harjoche	15- 8-6	6	795	6	695
Carter	Hilly	23- 8-6	3	1,000	3	995
Carter	Jones	11- 8-6	4	1,780	4	1,720
Carter	McGeisey	21- 8-6	1	25	1	20
Carter	Melisse	9- 8-6	1	300	1	285
Carter	Walker	15- 8-6	4	730	4	655
Carter	Wise	23- 8-6	12	3,660	12	3,810
Total Carter			34	10,031	34	9,660
Empire	Lacey	15- 8-6	6	665	6	603
Empire	Wise	23- 8-6	2	577	2	562
Total Empire			8	1,242	8	1,165
Gypsy	Bowlegs	22- 8-6	1	255	1	167
Gypsy	Bradley	8- 8-6	1	5	1	5
Gypsy	Cumsey	8- 8-6	4	1,475	4	1,707
Gypsy	Dosar	7- 8-6	1	100	1	100
Gypsy	Grayson	13- 8-6	4	1,035	4	1,127
Gypsy	Harjoche	10- 8-6	2	3,695	2	1,232
Gypsy	Henderson		1	68	1	62
Gypsy	Jones	11- 8-6	1	360	1	360
Gypsy	Walker	15- 8-6	8	1,835	8	1,960
Gypsy	Wise	23- 8-6	3	257	3	75
Total Gypsy			26	9,085	26	6,795
I. T. I. O.	Barnett-A	24- 8-6	2	231	2	355
I. T. I. O.	Barnett-B	24- 8-6	1	237	1	275
I. T. I. O.	Billington	22- 8-6	5	980	5	683
I. T. I. O.	Bowlegs	22- 8-6	11	1,792	11	1,550
I. T. I. O.	Davis	13- 8-6	4	1,340	4	1,135
I. T. I. O.	Fay	18- 8-6	9	2,431	9	2,626
I. T. I. O.	Goforth	15- 8-6	12	1,439	12	1,873
I. T. I. O.	Livingston	15- 8-6	11	4,062	11	3,966
I. T. I. O.	Lizzie	11- 8-6	2	523	2	592
I. T. I. O.	Walker	15- 8-6	8	985	8	1,044
I. T. I. O.	Wilmont	15- 8-6	4	822	4	888
I. T. I. O.	Work		2	124	2	135
I. T. I. O.	Youngblood	22- 8-6	2	269	2	285
Total I. T. I. O.			74	14,997	74	15,052
McCulloch	Bowlegs	22- 8-6	3	345	3	390
Magnolia	Davis-BF	13- 8-6	2	730	2	703
Magnolia	Davis-M	13- 8-6	1	322	1	339
Magnolia	Hammond	10- 8-6	3	528	3	480
Magnolia	Rhodes	10- 8-6	2	4,850	2	4,808
Magnolia	Van Buskirk	9- 8-6	1	307	1	258
Total Magnolia			15	6,737	15	6,588
Mid-Continent	Baker	10- 8-6	4	1,642	4	1,700
Mid-Continent	Bowlegs	22- 8-6	1	55	1	45
Mid-Continent	Smith	12- 8-6	6	860	6	720
Total Mid-Continent			11	2,557	12	2,466
Minnehoma	Bowlegs	15- 8-6	4	279	3	305
Prairie	Gahagan	23- 8-6	4	365	4	390
Prairie	Harber	10- 8-6	8	3,495	8	3,525
Prairie	Jones	11- 8-6	4	540	4	475
Prairie	Templeton	12- 8-6	5	2,590	5	3,090
Prairie	Whitney	23- 8-6	4	565	4	465
Total Prairie			25	7,555	25	7,945
Pure	Reed	14- 8-6	15	3,480	15	3,487
Pure	Strother-D	14- 8-6	4	505	4	608
Pure	Strother-F	10- 8-6	4	947	3	1,013
Total Pure			23	4,932	22	5,108
Roxana	Taylor	16- 8-6	5	1,091	5	1,145
Shaffer	Lacey	14- 8-6	3	525	3	540
Sinclair	Bowlegs	22- 8-5	1	75	1	60
Sinclair	Cumsey	10- 8-6	4	5,225	4	5,500
Sinclair	Ellen	11- 8-6	7	1,562	7	1,712
Sinclair	Harjo	14- 8-6	3	765	3	790
Sinclair	Jones	8- 8-6	6	5,071	6	4,340
Sinclair	Taylor-M	10- 8-6	4	2,984	4	3,053
Sinclair	Taylor-W	10- 8-6	1	1,783	1	1,692
Sinclair	Walker	22- 8-6	4	885	4	775
Total Sinclair			30	18,350	30	17,925
Texas	Reed	14- 8-6	11	2,975	11	2,825
Tidal	Grayson	13- 8-6	3	965	3	1,105
Tidal	Harjoche	10- 8-6	6	2,200	6	2,230
Total Tidal			9	3,165	9	3,335
Twin State	Jones	10- 8-6	2	50	2	53
Total BOWLEGS			310	89,571	310	87,230

LITTLE RIVER

Company	Farm	S.T.R.	Feb. 29 Wells	Feb. 29 Prod.	Feb. 24 Wells	Feb. 24 Prod.
Amerada	Fore	35- 8-6	2	1,060	2	1,075
Amerada	Nitey	35- 8-6	3	2,975	3	3,005
Total Amerada			5	4,035	5	4,080
Barnsdall	Hotulke	22- 7-6	1	50	1	30
Blackwell	Nitey	35- 8-6	7	2,646	7	2,648
Carter	Fish	1- 7-6	5	1,860	5	1,930
Carter	Jackson	11- 8-6	1	100	1	100
Total Carter			6	1,960	6	2,030
Continental	Cosar	2- 7-6	3	1,045	2	405
Gypsy	Brown	33- 8-6	1	50	1	50
Gypsy	Campbell	36- 8-6	2	100	2	27
Gypsy	Nungee	36- 8-6	1	45	1	45
Gypsy	Pottey	35- 8-6	3	477	3	450
Total Gypsy			7	672	7	572
Independent	Harris	23- 7-6	1	104	1	108
Indep. et al	Davis	2- 7-6	2	1,985	1	1,880
Total Independent			3	2,989	2	1,988
I. T. I. O.	Campbell	1- 7-6	1	133	1	124
I. T. I. O.	Dungan	35- 8-6	3	2,561	3	2,706
I. T. I. O.	House-MA	1- 7-6	1	180	1	243
I. T. I. O.	A-House-WE	1- 7-6	1	48	1	65
I. T. I. O.	B-House-WE	2- 7-6	3	1,662	3	1,733
I. T. I. O.	Jackson	1- 7-6	3	2,110	3	2,248
I. T. I. O.	McCulla	1- 7-6	3	1,000	3	1,000
I. T. I. O.	Nitey	2- 7-6	7	1,839	7	1,678
I. T. I. O.	Phoebe-A	36- 8-6	3	732	3	812
I. T. I. O.	Phoebe-B	36- 8-6	4	361	4	441
I. T. I. O.	Reed	1- 7-6	1	113	1	148
I. T. I. O.	Hull	26- 8-6	0	0	1	118
I. T. I. O.	Sotkneche	1- 7-6	4	1,011	4	963
Total I. T. I. O.			34	11,787	35	12,279
Magnolia	Cruse	2- 7-6	1	670	1	651
Magnolia	Pottey	35- 8-6	2	473	2	468
Total Magnolia			3	1,143	3	1,119
Mid-Continent	Wadsworth	26- 8-6	7	1,020	7	1,070
Mid-Continent	Smith	12- 8-6	1	40	1	40
Total Mid-Continent			8	1,060	8	1,110
Pine et al	Pottey	35- 8-6	2	95	2	1,242
P & R	Dungan	35- 8-6	2	135	2	0
P & R	House	2- 7-6	4	1,825	4	2,085
Total P & R			6	1,960	6	2,085
Roxana	Smith	1- 7-6	1	7	1	5
Shaffer	Narcome		1	150	0	0
Sinclair	Cosar	36- 8-6	2	1,870	2	1,770
Snowden et al	Tiger	13- 8-6	1	93	1	0
Superior	Wadsworth	1- 7-6	1	16	1	18
Texas	Coker	1- 7-6	3	615	3	625
Tidal	House	1- 7-6	3	1,292	3	1,335
Tidal	Johnson	1- 7-6	1	70	1	70
Total Tidal			4	1,362	4	1,405
TOTAL LITTLE RIVER			100	32,655	97	33,451

EARLSBORO

Company	Farm	S.T.R.	Feb. 29 Wells	Feb. 29 Prod.	Feb. 24 Wells	Feb. 24 Prod.
Amerada	Anderson	15- 8-5	2	1,400	2	1,445
Amerada	Cowden	4- 8-5	8	1,955	8	1,940
Amerada	Rodgers	3- 9-5	2	1,430	3	1,350
Total Amerada			12	4,785	13	4,735
Barnsdall	Brown	10- 9-5	4	1,653	4	1,673
Barnsdall	Bruner-F	2- 9-5	2	1,004	2	1,010
Barnsdall	Bruner-N	11- 9-5	4	1,502	4	1,608
Barnsdall	Cudjo	11- 9-5	1	97	1	26
Barnsdall	Davis-D	11- 9-5	4	1,793	3	1,968
Barnsdall	Davis-J	11- 9-5	4	706	4	730
Barnsdall	Gibson	9- 9-5	8	2,868	8	3,346
Barnsdall	Hearn	15- 9-5	1	6	1	6
Barnsdall	Ingram	4- 9-5	7	3,912	7	5,263
Barnsdall	Pack	10- 9-5	4	207	4	198
Barnsdall	Peter	10- 9-5	4	283	4	324
Barnsdall	Sango	2- 9-5	3	6,274	3	7,019
Barnsdall	Sebolka	15- 9-5	1	690	1	815
Barnsdall	Sullivan	10- 9-5	2	64	2	17
Barnsdall	Watsutke	12- 9-5	4	1,874	4	1,861
Total Barnsdall			58	22,997	57	26,092
Carter	Davis	13- 9-5	2	500	1	570
Carter	Payne	12- 9-5	3	145	3	140
Carter	Sango	2- 9-5	4	3,190	4	3,395
Total Carter			9	3,795	8	4,085
Continental	Kays	2- 9-5	2	20	2	240
Continental	Spencer	12- 9-5	4	1,020	4	665
Total Continental			6	1,040	6	905
Empire	Barker	12- 9-5	1	1,370	1	1,497
Empire	Edmundson	3- 9-5	3	1,202	3	1,213
Total Empire			4	2,572	4	2,710
Gypsy	Bruner	10- 9-5	4	2,817	4	1,840
Gypsy	Boro		1	22	0	0
Gypsy	Carter	11- 9-5	10	3,675	10	3,602
Gypsy	Earl	16- 9-5	1	15	1	15
Gypsy	Hunick	5- 9-5	1	2,080	1	2,190
Gypsy	Noble	12- 9-5	4	3,295	4	4,002
Gypsy	Peter	10- 9-5	3	225	6	152
Gypsy	Sango	1- 9-5	5	5,962	5	4,737
Gypsy	State	16- 9-5	4	1,185	4	1,197
Total Gypsy			33	13,314	36	17,736
Independent	Bruner	10- 9-5	4	282	4	145
Independent	Gains	11- 9-5	4	1,520	4	980
Independent	Knapp	8- 9-5	5	2,284	6	2,459
Indep.	O'Dell	4- 9-5	1	15	4	25
Indep.	Sullivan	10- 9-5	3	192	4	18
Total Independent			17	4,293	22	3,627
Magnolia	Bryant	9- 9-5	6	2,633	6	2,642
Magnolia	Cowden	4- 9-5	4	52	4	65
Magnolia	Edmundson	3- 9-5	3	42	3	42
Magnolia	Holmsley	11- 9-5	8	2,032	8	1,854
Magnolia	Ingram	10- 9-5	1	30	1	30
Magnolia	Lena	10- 9-5	3	83	3	78

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, February 29 and February 24, 1928

(*Continued from Page 42*)

Company	Farm	S.T.R.	Feb. 29 Wells	Feb. 29 Prod.	Feb. 24 Wells	Feb. 24 Prod.
Magnolia	Seay	12- 9-5	9	3,480	9	5,315
Magnolia	Simpson	10- 9-5	3	305	4	313
Magnolia	Sparks	11- 9-5	7	2,155	7	2,349
Magnolia	Sullivan	12- 9-5	3	234	3	113
Total Magnolia			47	11,056	51	12,801
Mid-Continent	McCumber	9- 9-5	7	500	7	325
Mid-Kansas	Anderson	14- 9-5	3	200	4	210
Phillips	Dunnaway	15- 9-5	1	20	1	20
Phillips	Graham	9- 9-5	4	440	4	330
Total Phillips			5	460	5	350
Prairie	Baker	23- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	2,395	4	5,035
Prairie	Graham-C	3- 9-5	2	25	2	45
Prairie	Graham-O	10- 9-5	4	2,350	4	2,585
Prairie	Stidham	11- 9-5	13	4,265	13	3,825
Total Prairie			25	9,085	24	11,540
Roxana	Bayliss	17- 9-5	1	13	1	14
Roxana	Spencer	12- 9-5	2	1,810	2	1,802
Total Roxana			3	1,823	3	1,816
Shaffer	Clark	1- 9-5	6	1,859	5	1,141
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	3	180	3	325
Sinclair	Sango	2- 9-5	2	3,905	2	3,740
Total Sinclair			6	4,100	6	4,080
Skelly	Spencer	12- 9-5	1	700	1	706
Texas	Anderson	2- 9-5	6	800	6	825
Texas	Brown	10- 9-5	8	2,440	8	2,690
Texas	Rodgers	5- 9-5	4	4,610	4	4,035
Texas	Wilmont	10- 9-5	6	3,185	6	2,985
Total Texas			24	11,035	24	11,535
Tidal	Watkins	9- 9-5	8	3,070	8	3,070
Twin State	Barker	12- 9-5	4	160	3	65
Twin State	Hearn	2- 9-5	4	1,900	4	3,095
Total Twin State			8	2,060	7	3,160
TOTAL EARLSBORO			287	104,948	290	110,740
TOTAL LITTLE RIVER			100	32,655	97	33,451
TOTAL SEARIGHT			70	17,748	71	17,783
TOTAL BOWLEGS			310	89,571	310	87,230
TOTAL SEMINOLE			311	56,459	314	55,985
GRAND TOTAL SEMINOLE AREA			1,078	301,381	1,084	305,189
Avg. per well				280		281

Note: Beginning with this issue the production by leases of the active fields in the Seminole district is as of each Wednesday instead of Friday.

Completions in Oklahoma and Kansas, Week Ended March 3, 1928

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Roxana	1	SEc SW SW 14-1-3 W	2365-2455	320
Boring	1	SWc SE NW 10-4-2 W	2175-2184	125
Coline	6	SEc SW NW 6-2-2 W	T.D. 4139	Dry

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Transcontinental	4	SWc SE SW 14-17-8 E	T.D. 2792	Dry
Pure	12	CNL SE SE 26-18-12 E	T.D. 2198	Dry
Hayden et al	1	NEc SE SE 1-19-9 E	2058-2-78	45
Roxana	3	NEc NW NE 18-19-10 E	2865-2871	817
Wilson	1	SWc SE 36-16-10 E	2704-2716	20
Wilcox	1	SEc NW 18-14-10 E	3403-3426	46
Independent	9	SWc NW NE 18-14-10 E	3420-3433	305

Garfield County

Company	Well No.	Location	Depth	Init. Prod.
Sinclair	19	SWc NW 18-22-3 W	T.D. 5958	Dry

Grady County

Company	Well No.	Location	Depth	Init. Prod.
Carter	2	SWc NW NE 34-3-5 W	T.D. 1497	OWD Dry
Okla. Gas Util	8	NWc SW NE 26-5-8 W	2004-2400	49M
Carter	5	CWL E½ NE SW 2-4-8 W	2059-2350	42M
Commerce Dev	1	NWc SW NE SW 13-4-8 W	2238-2365	41M
Texas	2	NEc SW NW 13-4-8 W	2259-2359	17M
Franklin et al	4	NWc SE NE 17-3-5 W	2354-2387	100
Carter	5	NWc NE SE 21-3-5 W	1785-1796	85
Carter	1	NWc NE SW 27-3-5 W	1860-1866	95

Hughes County

Company	Well No.	Location	Depth	Init. Prod.
Holmes	1	NWc SE NE 21-7-8 E	4352-4362	115

Kay County

Company	Well No.	Location	Depth	Init. Prod.
Royal	1	C SE NE 12-28-1 W	760-768	½M
Industrial	1	C NE NE 2-27-1 W	755-761	1½M
Rogers et al	1	32-27-1 W	749-761	3.4M
Royal	1	C NW SW 5-27-1 E	821-858	.43M
Dewey et al	1	SEc SW 5-27-1 W	T.D. 3212	Dry

McIntosh County

Company	Well No.	Location	Depth	Init. Prod.
Aggas	5	SWc 3-12-14 E	1180-1190	½M

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Boyle et al	4	C NE SE 8-15-15 E	765-1614	180&2M
Peterson	7	CSL SW SE SE 18-14-17 E	530-543	3M

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Sheldon et al	1	NEc NW NW 22-12-11 E	3465-3515	24
Barnsdall	1	CNL S½ SW NE 20-10-9 E	3290-3309	44M
Laurel et al	1	SWc SE NE 21-13-9 E	T.D. 3905	Dry

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Johnson	3	CEL SW NE 2-13-12 E	2773-2781	1½M
Rebold	1	SWc NE 6-15-13 E	2085-2095	30M
Independent	1	SWc SE NW 9-15-14 E	1821-1835	4½M
Smith	10	NEc SE SW 18-14-15 E	1225-1236	6

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Kewanee	3	SEc SW NE 28-27-6 E	2894-2952	100 (14 hrs.)
Kewanee	7	NEc NW NE 28-27-6 E	2920-2995	1476
Lewis Prod	3	NWc SW SW 2-26-6 E	2845-2926	1200
Lewis Prod	4	SWc 2-26-6 E	2856-2901	800
Carter	5	NEc SE SE 3-26-6 E	2839-2902	1080
Peters	2	NEc SW 32-24-9 E	1476-1575	15
Delmar	4	NEc SW SE 17-23-10 E	2514-2516	17
Prairie	1	SWc NW NW 21-27-6 E	2874-2963	1050 (24 hrs.)
Kay County	1	SEc SW 4-25-6 E	T.D. 3349	Dry

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Watchorn	1	NEc SW SE 9-22-3 E	T.D. 3110	Dry
Turner et al	1	Blk-97, SEc SW NE 8-20-7 E	2641-2696	10
Black et al	4	CWL SW NE 6-20-8 E	2003-2024	2½M
Spinney	2	NEc SE 30-2-9 E	1105-1109	5
Sheridan	1	NEc SE NW 20-20-10 E	2196-2210	2M

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Westheimer	1	SEc 8-5-8 E	2366-2427	200
Louisiana	7	SWc NW 20-5-8 E	2757-2782	200

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Independent et al	3	SEc NW SW 14-7-4 E	3642-3793	335
Continental	1	SEc NW 19-7-4 E	3714-3862	475
Wrightsman	1	SEc NE NW 20-7-4 E	T.D. 4145	Dry

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Twin State	5	NWc NE NE 12-9-5 E	4299-4306	70
Carter	2	NEc SW NW 13-9-5 E	4362-4368	685
Magnolia	5	SWc NE 13-8-6 E	4195-4210	105
Texas	13	NEc 14-8-6 E	4425-4443	240
Carter	3	SWc SE SW 15-8-6 E	4415-4418	115
I. T. I. O.	8	NEc NW NE 15-8-6 E	4078-4150	179
Carter	7	NWc SW NW 36-8-6	4234-4238	650
I. T. I. O.	4	NWc NE SW 36-8-6 E	4880-4882	172
Sinclair	2	SEc NW NW 36-8-6 E	4298-4307	980
Magnolia	4	NWc SW NE 13-8-6 E	T.D. 4340	Dry

Rogers County

Company	Well No.	Location	Depth	Init. Prod.
Riggs	1	CNL NW NE 10-21-16 E	T.D. 857	Dry

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Pace et al	1	CNL NW NE 3-2-8 W	T.D. 2434	Dry
Snodgrass et al	1	NEc NW 34-1-8 W	1680-1689	250
Skelly	4	NWc SW SE 13-1-4 W	2289-3200	765

Tulsa County

Company	Well No.	Location	Depth	Init. Prod.
Superior	9	CWL SW SW 6-19-10 E	2018-2049	151

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
McDougal	1	SEc NW NW 21-17-15 E	1907-1912	OWD 60
Garland	2	CNL NW SE 14-19-16 E	T.D. 4339	Dry
Wilson et al	2	C SE SE 33-16-17 E	T.D. 1834	Dry
Garland	3	SWc NW NW SE 14-19-16 E	T.D. 445	Dry

KANSAS

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Skelly	1	NEc NW NE 31-31-6 E	2263-2304	100
Smith-Ash	1	NEc NE SE 3-30-4 E	T.D. 2986	Dry

Dickinson County

Company	Well No.	Location	Depth	Init. Prod.
Harwood et al	1	SWc SE NW 35-16-4 E	T.D. 2601	Dry

Elk County

Company	Well No.	Location	Depth	Init. Prod.
Denton et al	16	SEc NE 4-30-9 E	2300-2329	75
Union Gas	23	C NE NW 14-31-10 E	1093-1126	.8M
Denman Bros	2	SWc 36-31-10 E	1991-1994	½M

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Empire	8	NWc SE NE 25-22-12 E	1672-1724	75
Darby	6	SWc NW 30-22-13 E	1694-1759	350
Lassen et al	3	SEc SW 6-25-9 E	2194-2216	100
Empire	2	CNL NW NE 15-25-13 E	1425-1447	50
Empire	5	SWc NE SE 25-22-12 E	T.D. 2232	Dry
Powell et al	1	SWc NW 8-24-11 E	T.D. 2135	Dry

Marion County

Company	Well No.	Location	Depth	Init. Prod.
Prairie	1	SWc SE NW 1-18-4 E	T.D. 2805	Dry
Braden et al	1	NEc 22-17-4 E	2373-2433	50
Ramsey et al	1	SWc NE NE NE 22-17-4 E	2370-2429	400
Phillips	1	NEc NW SW NW 23-17-4 E	2349-2406	200

Russell County

Company	Well No.	Location	Depth	Init. Prod.
Streeter et al	1	SWc NW SW 33-13-15 W	3297-3317	1000

Shawnee County

Company	Well No.	Location	Depth	Init. Prod.
McBride et al	1	NEc SW 21-12-14 E	T.D. 2469	Dry

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Roxana	4	NWc SW SE 14-32-2 E	1202-1217	35
Palmer et al	2	NWc NE NE NW 23-32-2 E	1992-2013	700

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended March 3, 1928

NORTH AND EAST CENTRAL

Brown County

Company	Well Farm	Location Survey	Depth	Init Prod.
Humble	4-Allen	Delgado	1096-1121	15
Pandem	4-Curry	Betts	1100-1113	40
Cranfill et al	2-Newton	Honeycutt	1128-1142	60
Cen. Tex	2-Alcorn	Honeycutt	1132-1147	50
Atlantic	1-Tullas	T&NO	1297-1314	63
Blanchard et al	2-Kelsey	H&TB	T.D. 1350	Dry
Scrivnor	1-Turner	Graham	T.D 1275	Dry
Logan-Carter	1-Mansfield	Furlong	T.D. 1290	Dry
Mitchell	2-Alcorn	Honeycutt	T.D. 1157	Dry
Gibson et al	1-George	Bross	T.D. 1604	Dry
Randall et al	1-McDaniels	Perry	T.D. 915	Dry

Callahan County

Harwell	1-Wagley	D&DA	T.D. 258	Dry
Ganer et al	2-Hatchett	D&DA	T.D. 410	Dry
Ganer et al	3-Hatchett	D&DA	T.D. 400	Dry
Cunningham	2-Jennings	Lipscomb	T.D. 1200	Dry

Coleman County

Anzic et al	1-Gardner	Fertuson	2296-2306	170
Manhatan	1-Overall	GH&H	2285-2300	30

Comanche County

Edwards	1-Allen	Mitchell	T.D. 1501	Dry

Eastland County

Charter	1-Roper	BBB&C	1361-1381	½M

Jones County

Phillips	1-Pomroy	TP	2444-2473	175

Lime County

Transcontinental	2-Ward	Varella	2868-2973	150

Shackleford County

Kingwood	1-Gorsuch	TP	1495-1511	10
Albany	7-Reynolds	TP	T.D. 1334	Dry

Stephens County

Mook Texas	4-Riddle	TP	T.D. 2200	Dry

Young County

Paull	2-Scarborough	Sherrill	T.D. 2243	Dry
White Bros.	1-Eddleman	TE&L	2064-2076	35

NORTH TEXAS

Archer County

Fain et al	1-Wilson	Geraldine	1560-1563	80
Johnson et al	1-Wilson	Geraldine	1562-1564	115
Atlantic et al	1-Benson	TE&L	847-854	2
Golding et al	2-Prideaux	McMullen	642-644	20
Burleson et al	1-Perkins	DCSL	T.D. 1605	Dry
Consolidated	1-Kinder	Clark et al.	T.D. 1350	Dry
Panhandle et al	1-Farmer	N A R	T.D. 1570	Dry

Cooke County

Green et al	3-Campbell	Leverett	T.D. 744	Dry
Green et al	2-Campbell	Leverett	718-747	10
Hedrick Camp	1-Lynch et al.	Scott	1361-1381	8

Montague County

The Texas	3-Hinton	Coates	773-777	8

Wichita County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Wolfe et al	2-Daume	SP	T.D. 1818	Dry
Lomax Bros.	1-Chilson	Ramsey	T.D 1889	Dry
Burk	1-Dutton	DCSL	T D. 1831	Dry
Stump	1-Chilson	DCSL	T.D. 1810	Dry

Wilbarger County

Fain et al	1-Waggoner	H&TC	T.D. 2505	Dry

Young County

Roberts	1-Thomas	TE&L	T.D. 1052	Dry
Seigler et al	1-Bloodworth	TW&L	T.D. 908	Dry
Alexander et al	2-Johnson	Sargent	T.D. 612	Dry
Kliner et al	2-Langston	TE&L	564-583	38

PANHANDLE

Gray County

Skelly	1-Jackson	H&GM	2865-2870	50
Atlantic	1-Coombs	I&GN	T.D. 3365	Dry
Delaney et al	2-Jackson	H&GN	2850-3054	40
Phillips	1-Jackson	H&GN	2839-2939	300
Phillips	2-Jackson	H&GN	2830-3026	120

Hutchinson County

Navajo	1-Dixon et al.	D&SE	T.D. 3055	Dry

Sherman County

Phillips	1-Price	GH&H	T.D. 4001	Dry

Wheeler County

Arnold et al	1-Williams	H&GN	1644-1780	1½M
Mid-Kansas	1-Coates	H&GN	1940-1950	18M

WEST TEXAS

Culberson County

Gardner	1-PSL	Univ.	T.D. 635	Dry

Howard County

Magnolia	4-Hyman	W&NW	1595-1620	20
Colie et al	3-Roberts	W&NW	1854-1864	50
Marland	1-Richardson	T&P	T. D. 3618	Dry
Marland	1-Connally	....	T.D. 4400	Dry

Pecos County

Transcontinental	1-Blackstone	Slaughter	T.D. 4760	Dry
Meedy	1-Corder	GCSD&R	T.D. 2965	Dry
California	13-Yates	TC	1310-1482	911 (1 hr.)
Mid-Kansas et al	7-Smith et al.	TC	1345-1526	322 (1 hr.)
Mid-Kansas et al	10-Yates	I&GN	1208-1313	635 (1 hr.)
Mid-Kansas et al	21-Yates	I&GN	956-1106	2211 (8 hrs.)

Upton County

Southern Crude	1-Hebbs	H&TC	T.D. 3249	Dry

Winkler County

Cranfill Bros.	1-Bashara	PSL	T.D. 3503	Dry
Atlantic	4-Hendricks	PSL	2937-3032	1400
Humble	4-Hendricks	PSL	2968-2979	3393
Independent	5-Hendricks	PSL	2935-2955	2200
Independent	6-Hendricks	PSL	2902-2927	1200
Independent	7-Hendricks	PSL	2655-2927	1242
Landreth Prod.	3-Hendricks	PSL	2942-2959	3124
Turman et al	2-Hendricks	PSL	2865-2986	800
Turman et al	3-Hendricks	PSL	2930-2930	1386
Southern Crude	5-Hendricks	PSL	2900-3044	300
Southern Crude	6-Hendricks	PSL	2916-3050	1200

Completions in North Louisiana and Arkansas, Week Ended March 1, 1928

Louisiana—Caddo Parish—Pine Island

Company	Well	Location	Depth	Yield
Simplex Oil Corp.	Baird No. 2	22-20-15	2225	150 bbls.

Caddo Parish—Blanchard

Magnolia Pet. Co.	J. W. Furrh No. 1	28-18-16	2753	salt water, abd.

Bienville Parish

Edwin J. Forrest et al.	Perritt No. 1	11-17-6	3048	salt water, abd.

Morehouse Parish

Moody & Seagraves	Wolff & McInnis No. 1	13-20-4E	2174	16M gas
Nat. Gas & Prod. Co.	Waldrop No. 1	7-21-3E	2282	4M gas
John Potts	Bernstein No. 1	30-20-4E	2155	11M gas

Ouachita Parish

Jordan Drlg. Co.	McGee No. 2	10-18-4E	2218	5M gas

West Carroll Parish

Palmer Corp.	White No. 1	2-19-10E	2846	dry, aband.

Richland Parish

Company	Well	Location	Depth	Yield
Nat. Gas & Fuel Fuel Corp.	Thomason C-2	21-16-6E	290	junked, abnd.
Palmer Corp.	Wayne Land & Timb. Co. No. 2	23-15-5E	2525	dry, aband.
United Carb. Co.	Mulhern No. 1	20-16-6E	2440	58M gas

Caldwell Parish

Grayson Oil Co.	Crockett No. 1	6-12-4E	2675	dry, aband.

LaSalle Parish—Little Creek

Wingfield et al.	Gibson No. 3	2-9-1E	1496	salt water aband.

Waskom—Harrison County—Texas

Mississippi Waskom Gas Co.	Bush No. 2	R. W. Bedford HRS	1949	3M gas
Waterman Brick & Tile Co.	Hickman No. 5	E. Pollock HRS	2857	16M gas

Arkansas—Champagnolle

Magna Prod. Co.	Rowland No. 1	14-17-14	2999	130 bbls.

Nevada County—Stephens

J. J. O'Brien	R. Haynie 1 A-5	6-20-14	1205	50 bbls.

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended March 3, 1928

	March 3 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Feb. 25 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	2	6	31	..	39	1	6	34	..	41
Other Osage	2	5	20	2	29	4	5	21	1	31
Bristow-Cushing	6	5	37	8	56	5	6	37	9	57
North Oklahoma	11	5	65	40	121	10	9	70	37	126
South Oklahoma	10	16	126	25	177	6	19	130	29	184
Muskogee	..	3	38	17	58	..	5	43	14	62
Okmulgee-Bristow	13	35	70	17	135	14	38	71	19	142
Seminole Dist.	18	33	134	14	199	13	34	139	13	199
Total Oklahoma	62	108	521	123	814	53	122	545	122	842

	March 3 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Feb. 25 Loc.	Rigs	Drg.	S.D.	Total
KANSAS	38	64	129	70	301	43	65	127	74	309
TEXAS										
Central	..	101	227	145	473	..	100	198	152	450
Panhandle	..	51	101	74	226	..	58	102	66	226
N. Central	..	49	91	27	167	..	50	90	27	167
West	..	118	207	148	473	..	123	206	148	477
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	320	651	413	1,384	..	332	621	412	1,365
New Mexico	..	4	16	17	37	..	4	16	24	44
GRAND TOTAL	100	496	1,317	623	2,536	96	523	1,309	632	2,560

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended March 3, 1928

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Franklin	1-Morris	NWc SE 11-2-3 W

Creek County

Banks	2-Crider	C SL SE NW 31-17-12
Thompson et al	3-Broadnax	NWc SE NW 16-17-11
Tidal	1-Roberts	NWc SE 20-17-7 E
Hull	3-Walker	SEc SW SW 21-18-9
Roxana	3-Clark	SEc NE NW 18-19-9
Greives	7-Porter	CWL NW SE 12-19-8 E

Garvin County

Magnolia	28-Cowan	SEc NE 15-1-3 W

Hughes County

Dixie et al	2-Perryman	SEc SW 17-8-10 E

Jefferson County

Amerada	1-Emerson	NWc SE SW 28-5-8 W

Kay County

Wheeler	1-Wheeler	SEc SW SW 14-27-1 W
Black Gold	3-Moore	NEc NW NW 10-27-1 W OWD

Muskogee County

Boyle et al	2-Simmons	CWL SW NE 10-15-15 E
Tilley	1-Ackley	NEc SW NW SW 34-15-19 E

Okmulgee County

Anadarka Western	1-Ross	NEc SE 12-15-11

Osage County

Peters	3—	CN½ S½ 26-25-9
Phillips	9—	SEc NE SW SE 17-27-6
Phillips	8—	SWc SE NW SE 17-27-6

Pottawatomie County

Indpenedent	1-Saunders	NWc NE NE 19-7-4 E
Independent et al	2-Wallace	NEc SW SW 14-7-4 E
Independent et al	3-Hamby	SEc NW NW 14-7-4 E

Seminole County

Reiter et al	1-Bunyard	SEc NW SW 14-7-6 E
Ramsey	2-Culley	NEc SW NE 18-5-8 E
Louisiana	4-Reed	SEc NW NE 18-5-8 E
The Texas	1-Hyde	SWc NW SW 8-5-8 E
Louisiana	3-Punluste	NWc SW SW 8-5-8 E
Mid-Continent	4-Fleet	NEc SE SE 7-5-8 E
I. T. I. O.	3-Lizzie	NWc SW NW 11-8-6 E
Magnolia	6-Hammond	NEc SE NE 10-8-6 E
Gypsy	6-Sango	SWc NW SE 1-9-5 E
Furhman	1-Davis	SWc SE 3-10-6 E

Stephens County

Beard et al	3-Wade	NWc SW NE 11-2-8 W
Schermerhorn et al	1-Russell	NEc NW SE 11-1-4 W
Pearce et al	8-Wilkinson	SWc SE 27-1-8 W
Amerada	1-Hanson	NEc SE SW 12-1-4 W

Tulsa County

Superior	10-McKee	NWc SW SW SW 6-19-10

Wagoner County

Cane et al	2-Williams	SEc NW SE 35-17-17 E
Sewell et al	2-McIntosh	CEL SE NE 18-17-16 E OWD

KANSAS

Butler County

Empire	1-Marshall	NWc SW NW 22-27-6 E

Elk County

Roth et al	12-Hanna	NWc NE NW SW 13-29-8 E
Jacon	2-Mullendore	SWc NW SW 3-30-9 E
Phoenix	4-Mills	NEc NW NW NW 23-30-10 E
Sherman et al	1-Baker	SWc NW NW NW 10-31-10 E

Greenwood County

Simmons et al	2-Schwab	NWc SE SE 30-22-13 E
Skelly	2-Schwab	SEc SW NE 30-22-13 E
Skelly	1-Len	NWc SE NE 32-22-13 E
Superior	1-Len	SEc NW NE 33-22-13 E

Marion County

Braden et al	1-Folks	NWc 23-17-4 E
Lariaux et al	2-Merrilatt	NWc SE NW 23-17-4 E
Lariaux et al	3-Merrilatt	SWc SE NW 23-17-4 E
Deiter et al	1-Fronta	NEc 21-18-4 E

Woodson County

Spencer et al	1-Kimball	SEc NE 32-24-14 E

TEXAS

NORTH AND NORTH CENTRAL

Archer County

Company	Well No. Farm	Location	Survey
Mid-Kansas	1-Campbell	Blk-4	Crawford Sub-Div.
The Texas	1-Wolfe	....	Finch
Fain et al	3....	Blk-27	Townsite
Cullum	1-Mankins	Sec-1	SP
Robertson et al	1-Smith	Blk-1	Aimsworth
Johnson et al	2-Wilson	Blk-26	Townsite
Johnson et al	1-Wilson	Blk-19	Townsite
Fain et al	2-Wilson	Blk-27	Townsite

Brown County

Breeding et al	1-Hickman	Blk-783	Benson
Preston et al	1-Bush	Blk-624	Kenney
Lamb et al	1-Perry	Blk-624	Kenney
Lamb et al	2-Perry	Blk-624	Kenney
Lamb et al	3-Perry	Blk-624	Kenney
Peckham et al	1-Bush	Blk-624	Kenney
Peckham et al	2-Bush	Blk-624	Kenney
Davis et al	1-Perry	Blk-624	Kenney
Roff	1-Bull	Blk-623	Honeycutt
Henshaw	1-Bush	Blk-624	Kenney
Richards	3-Curry	....	Betts
Pandem	6-Curry	....	Betts
Pandem	1-Curry	....	Betts
Clark Buffalo	2-Brown Co. Fee Land	Blk-624	Kenney
Mitcham et al	1-Newton	Blk-623	Honeycutt
The Texas	24-Hickman	Blk-783	Benson
Humble	11-Gilbreth	....	DeBord
Woods et al	1-Baugh	Blk-638	Neal

Callahan County

Martimor et al	1-Hickman	Sec-1	I&GN
Manhattan et al	1-Kirby	Sec-1	Lussiter
Westheimer	1-Snider	Sec-143	BBB&C

Coleman County

Smith et al	1-Hill	Blk-664	Sprague
Moutray	1-Miller	Sec-121	Perry
Roxana	1-Henderson	Blk-167	McCarty
Pitts et al	1-Bums	Sec-17	White
English et al	1-Harris	Blk-519 OWD	San Augustine Univ.

Cooke County

Green	4-Campbell	....	Leveritt

Eastland County

Cranfill et al	1-Tate	Abstract-797	Ackerman
Gordon	1-O'Reor	Abstract-356	Clifton

Jack County

Seaboard	4-Cullers	Sec-4, Abstract 2188	Cullers

Limestone County

Forbes et al	1-Tidewall	....	Varella
Gulf Prod	1-McCammond	....	Moore

McCulloch County

Tulsa Drlg	1-Kirkpatrick	....	Henderson

Montague County

Spencer et al	1-Bouldin	Abstract-146	Chacon

Stephens County

Schemmel Prod	1-Tolls et al	Sec-458	SP
Lawton et al	1-Langford	Sec-52, Blk-6	T&P

Shackleford County

Phillips et al	1-Davis	Sec-20, Blk-13	T&P
Dinger et al	1-Matthews	Sec-29	ET
Hope	10-Davis	Sec-13, Blk-12	T&P
Cosden	2-Davis	Sec-13, Blk-12	T&P
Gilman et al	1-Davis	Sec-13, Blk-12	T&P
Gilman et al	1-Reynolds	Sec-30, Blk-11	T&P

Wichita County

Hobbs	2-Hoge	Sec-39	WVFL

Wilbarger County

Waggoner	3-Waggoner	Sec-25, Blk-4	H&TC
Waggoner	4-Waggoner	Sec-25, Blk-4	H&TC
Consolidated	1-Bates	Sec-42, Blk-2, Abstract 1589	H&TC
Consolidated	2-Waggoner	Sec-24, Blk-2	H&TC
Marland et al	1-Waggoner	Sec-4, Blk-17, Abstract-1837	H&TC
Golding et al	1-Waggoner	Sec-8, Blk-17	H&TC
The Texas	2-Waggoner	Sec-24, Blk-4	H&TC
Burton-Humble	1-Waggoner	....	Purnell
Milham	18-Waggoner	Sec-31, Blk-4	H&TC
Fain et al	3-Waggoner	Sec-24, Blk-4	H&TC

Young County

Panhandle et al	1-Oatman	Sec-2, Abstract-2173	Price
Reed-Woolen et al	1-McKinnley	Sec-1489	TE&L
Allday	3-Johnston	Blk-14	Sargent
Willis et al	1-Horten	Sec-1906	TE&L
Gross et al	1-Hinson	....	Langan
Moutray	3-Boozer	Abstract-108	Garrett
Mid-Texas	3-Childress et al	Abstract-1817	Morgan

WEST AND PANHANDLE

Carson County

Skelly	8-Schaeffer	NW SE SW Sec-88, Blk-4	I&GN

Crockett County

Zoch	1-Univ.	SWc Sec-16, Blk-14	Univ.

Gray County

Empire	1-Cobb	C NW Sec-178, Blk-3	I&GN

Howard County

F H E	1-Roberts	SWc NE Sec-136, Blk-29	W&NW
Magnolia	7-Roberts	NEc SW Sec-136, Blk-29	W&NW
Merrick et al	5-Hooks	SEc SW NW NW Sec-140, Blk-29	W&NW
Coyle-Conord	5-Roberts	Sec-156, Blk-29	W&NW

Pecos County

Buell-Hagen	1-Pryor et al.	Sec-16, Blk-5	TC
Kirby	1-Tippett	Sec-40, Blk-194	GC&SF
Gulf Prod	8-Yates	....	....
California	16-Yates	Sec-34, Blk-194	GC&SF

Reagan County

Skelly	1-Univ.	SE NE NE Sec-35, Blk-8	Univ.
Marland	1-Univ.	SEc SW Sec-26, Blk-8	Univ.
Roxana	1-Sawer & Land Cattle Co.	Sec-15	Casey

Terrell County

Wooley-Jones	1-Panckenham	C. SE NW Sec-43, Blk-2	CCSD&R

Winkler County

Roxana	7-Hendricks	SE NW NW Sec-29, Blk-B-5	PSL
Roxana	6-Hendricks	SW NE NW Sec-29, Blk-B-5	PSL
Humble	6-Hendricks	NE NW SE Sec-29, Blk-B-5	PSL
Humble	5-Hendricks	NW NE SE Sec-29, Blk-B-5	PSL
Atlantic	4-Hendricks	NE SW NW Sec-29, Blk-B-5	PSL
Southern Crude	1-Hendricks	SEc NE Sec-42, Blk-B-5	PSL
Southern Crude	2-Hendricks	NEc SE Sec-42, Blk-B-5	PSL
Roxana	6-Hendricks	SE SW NE Sec-41, Blk-B5	PSL
Roxana	5-Hendricks	SW SE NE Sec-41, Blk-B-5	PSL
Republic Prod	6-Hendricks	NW NE SE Sec-41, Blk-B-5	PSL
Pure	6-Hendricks	NWc SW Sec-41, Blk-B-5	PSL
Gulf Prod	15-Hendricks	NW SW NW Sec-40, Blk-B-5	PSL

Land Owners Hold Back Shut In Program in California

Staff Special

LOS ANGELES, March 3

THE movement to shut in between 60,000 and 75,000 barrels of daily production in California has lost some of its momentum.

This is largely due to difficulty in making necessary agreements with land owners. Again, many oil companies, when final details had to be worked out, found conditions that had not been provided for.

A meeting of the general committee working out details was held in Los Angeles March 2, but what was done has not been made known.

It is expected that the first steps looking to shutting in about 12,000 barrels of oil and about 65,000,000 cubic feet of gas at Ventura Avenue will be taken in a few days and the work may be completed in ten days. There is a loss there of about 80,000,000 cubic feet of gas, after it has been run through natural gasoline plants to strip it of its natural gasoline content. Gas companies are not in position to take the entire amount produced in the field.

Arrangements are about complete for shutting in considerable heavy crude oil production in Kern County and at Coalinga. Drilling operations are also slowing down in Kern County and other parts of the state. There is some drilling around Bakersfield and a few other areas; but, taking the state as a whole, and not counting Long Beach and Huntington Beach, field operations are far behind the same date of previous years.

This week, three deep sand wells were completed at Long Beach for a total flush production of nearly 6000 barrels. Seal Beach also furnished two new wells, with a flush production of about 1500 barrels. Several old wells were worked over, thus giving this field an increase. Huntington Beach output is holding up, largely on account of worked over wells.

At Rincon, Pan American's Hobson State 1 on a production test made 640 barrels of fluid, 35 per cent of which was oil of 15 gravity. Bottom of hole was 3220 feet, with 10¾-inch at 2788 feet. Bottom was then plugged to 2920 feet, giving it 132 feet of formation to produce from. The well had a pressure of 200 pounds and 600 pounds on the casing. It sanded up and at last report was standing idle. This was the deepest producer in the field, as the other two producers have bottom of hole at about 2550 feet. E. J. Miley has two wells in the oil sand slightly below 3100 feet, but is having trouble in shutting off water.

More Locations Made in McMillan Field

HOUSTON, March 1.—Locations have been made by Vacuum Oil Co., and others, for two additional tests in the McMillan field, eight miles northeast of Ballinger, Runnels county, where two earlier completions are producing oil testing about 45 degrees, A.P.I. gravity.

The first McMillan field well came in Aug. 27, 1927, making 150 barrels daily at 2542 feet. The second well, which began showing oil about the middle of February, was not completed until the end of the month, when it began producing regularly about 130 barrels daily, the oil accompanied by less than four barrels daily of water.

New locations are on the H. B. Fowler and J. S. Flanagan farms, both in the Domingo Diaz survey, where the two earlier wells were drilled.

McMillan field oil was originally found by Lou Ladd and associates of Fort Worth, who sold a half interest in the discovery well and surrounding acreage to the Vacuum for a consideration reported to have been $150,000 cash and the drilling of two "free" wells.

The oil is of the highest gravity produced in west Texas, free of sulfur content and similar in its refining characteristics to that found in Brown and Coleman counties. It comes from a producing area that ties in with the sand pay region fringing the western part of the general Ranger territory and geologically has nothing in common with the Permian salt basin province farther west.

McMillan pool production is handled in tank cars through a small loading rack built at Benoit, from which shipping point a combination 2-inch and 4-inch short pipeline of the Humble Pipeline Co. connects with the field.

TULSA, March 3.—J. H. Wright, successful independent producer of Sapulpa, Okla. died at his home in that city Thursday, March 1. Mr. Wright, who had been in the oil business for the past 17 years, drilled the discovery well in the Kellyville pool. He was well known for his charities, as well as his ability as an oil operator.

LINCOLN, Neb., March 3.—The directors of the Nebraska Independent Oil Men's Association have decided to have a spring convention of the N. I. O. M. A. as a regular event. Heretofore the state meetings have been held only once a year and several regional meetings between times. The 1928 spring meeting will be held on April 18 and 19 at Kearney, Neb.

Shallow Oil Discovered Near San Angelo

HOUSTON, March 2.—Oil found in a sandy shale horizon at 1270 feet in a test of P. E. Hill, and others, two miles east of Mertzon, Irion county, marks the first known occurrence of petroleum under these conditions in west Texas.

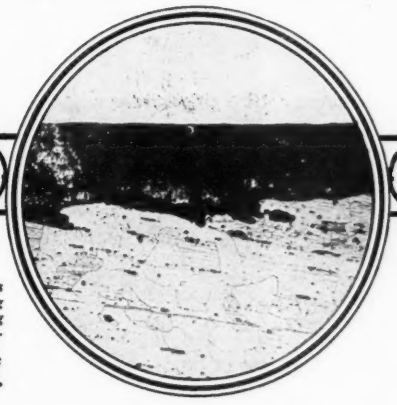
About 600 feet of oil testing 35 degrees. A.P.I. gravity, stands in the hole. The 8¼-inch casing was set at 1134 feet and the open hole to bottom shows evidence of caving.

The test, about 25 miles west of San Angelo and 60-odd miles east of the Big Lake field, Reagan county, is 150 feet from the north line and 450 feet from the east line of H&TC sec. 2, block 3.

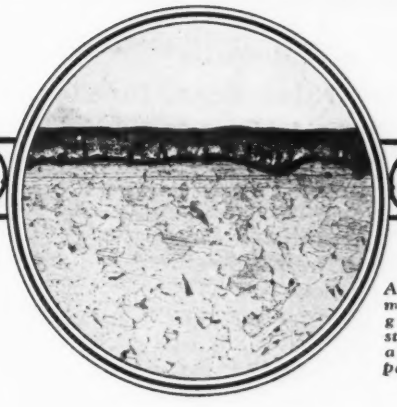
A drilling log made by Russell & Peck, Ranger contractors, follows. Above-sea-level elevation is 2286 feet. The well was spudded in Jan. 11, 1928.

0	18	surface soil
18	25	lime, hard
25	55	lime, yellow
55	80	lime, white
80	85	sand gray; half barrel water
85	105	lime, gray
105	115	shale, blue
115	120	lime, hard
120	130	red rock
130	160	shale, white
160	175	sand; bailer of water
175	220	shale, red
220	230	sand, hard
230	250	shale, red
250	260	shale, yellow
260	280	sand; lots of water
280	330	shale, red
330	335	sand, water
335	350	shale, yellow
350	365	shale,blue
365	375	lime, gray
Set 347.8 feet of 10-inch casing		
375	395	shale, blue
395	545	shale, sandy
545	550	sand; hard water
550	675	shale, blue
675	695	sand; hard water
695	720	shale, blue
720	740	water sand; show of gas
740	765	shale, blue
765	775	shale, red
775	780	water sand
780	855	red shale
855	890	shale, blue
890	895	lime, gray
895	915	shale, blue
915	930	shale, hard gray
930	935	shale, soft white
935	1060	shale, blue
1060	1070	salt water sand
1070	1085	shale, blue
1085	1140	gray lime; water
1140	1155	shale, blue
1155	1170	sandy shale
Sand from 720-740 very sharp and cut under-reamer lugs badly:		
Set 710 feet of 8¼-inch casing and under-reamed to 750		
1170	1175	shale, blue
1175	1210	shale, sandy blue
1210	1255	shale, red
1255	1270	shale, blue
1270	.....	sand

Eldorado Kansas, Seminole Gulf Coast and now West Texas



Note thickness of galvanizing coaton Reading Pipe and penetration—anchoring itself into the metal.



A similar photomicrograph of galvanized steel. Thin coat and lack of penetration!

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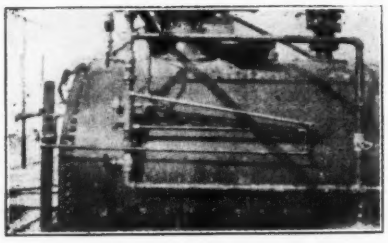

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Humble Plans Hendricks Gasoline Plant

HOUSTON, March 2.—Plans for building a natural gasoline plant in the Hendricks field, Winkler county, were disclosed by J. R. Davis of the traffic department of Humble Oil & Refining Co., at an Austin hearing before the state railroad commission. The hearing was on application of the Texas & New Mexico short line railroad to build from Monahans, on the Texas & Pacific, to Kermit, northeast of the Hendricks field.

Monahans and Pyote are fighting each other for the Texas & Pacific connecting point with the proposed short line; Wink and Kermit, both in Winkler county, are pitted against each other for the other terminal. Wink is in the edge of the Hendricks field and Kermit about four miles northeast.

Humble's proposed gasoline recovery plant in Hendricks would be the first of its kind in any of the Permian salt basin producing areas of west Texas except Big Lake. Generally the hydrogen sulfide gas accompanying crude oil production has caused companies to consider such construction impracticable. Oil from Hendricks field shows about 2 per cent sulfur content and a correspondingly higher hydrogen sulfide concentration percentage.

Standard to Return Gas Tax Money in Illinois

CHICAGO, March 3.—Standard Oil Co. of Indiana has decided to return to its Illinois customers the gasoline tax of 2 cents a gallon which they paid between Feb. 1 and Feb. 24 when the Supreme Court of Illinois handed down a decision rendering the tax law unconstitutional and the 2-cent tax inoperative. This is possible because the company has the money collected but has not remitted it to the state.

January taxes were paid to the state on or before Feb. 15, but February taxes were not due until March 15. Thus the oil companies are holding the taxes they collected between Feb. 1 and 24.

The decision to take this action was made at a meeting of the board of directors of the Indiana company on Friday, March 2.

LOS ANGELES, March 2.—Dr. E. F. Davis, head of the geological department of the Shell Co. of California, left New York last week on a visit to the head offices of the Royal Dutch Shell. His first stop will be at The Hague, and thence he will go to London where future plans for the California Company will be taken up.

FRED T. MANLEY

Refinery Executives In Texas Co. Shift

HOUSTON, March 1.—Fred T. Manley returns to the refining department of The Texas Co., as manager, after two years as southern sales manager. P. C. Scullin, for two years refining department manager, goes to New York as chairman of the manufacturing and marketing committee under President R. C. Holmes.

Both Messrs. Scullin and Manley have been connected with refinery affairs of The Texas Co., for a long time, Mr. Manley for 20 years prior to his transfer to the sales department.

P. & R. Moves Main Office To Independence

TULSA, March 3.—On March 5 the Producers & Refiners Corp. will open its general offices at Independence, Kan., in the newly completed addition to the office building of the Prairie Oil & Gas Co. The Prairie owns a controlling interest in the stock of the company which has had its offices in Denver up to today. The Denver offices in the future will consist only of district sales headquarters. L. U. Wagner will remain in charge of the Denver office.

The office moving will bring 167 people to Independence in 48 families. To prepare for their coming the Chamber of Commerce of Independence has been promoting the building of 45 new homes in the city.

Technical Control of Refinery Processes

By Ernest B. Phillips* and Albert E. Miller†

Part 2—The "Bogey" Workup to Check Refinery Operations

NEXT in importance to obtaining a knowledge of the possible products that can be obtained from any given crude, such as described last week, comes the control of daily routine operations in the refinery. The superintendent in charge of operations has daily reports made up showing the quality of all raw and finished stocks on hand. These must be qualitative and serve only to protect against sudden changes in crude supply or faulty operations in individual units of the plant.

If, however, a "bogey sample," amounting to at least a barrel, representing an aliquot portion of each day's stock, is made up to cover a month's operation, materials will be at hand for independent workups of the stocks into the products which the refinery is supposed to be making.

For this purpose bogey samples are needed consisting of (1) average crude, (2) average rerun naphtha, and (3) average process still charging stock, in case there is a special process, such as a cracking process, in the refinery. At the same time, a copy of the refinery yield statement and a composite of tests on all products made must be provided.

A form is then made up on which average tests for all products made by the refinery are shown. Bogey workups are then outlined to produce the same quality stocks as were made in the refinery. The final report shows refinery and bogey yields in parallel columns. Detailed descriptions of the apparatus used in this work would be of little value for the reason that each refining unit has its own special designs of equipment, which would have to be matched in experimental sized units.

The importance of bogey barrel runs can best be shown by a type case. Let us assume that we have a typical refinery equipped with tower stills for crude and rerun operations, coke stills operating on reduced crude and process still capacity to handle all available cracking stock. The materials charged to the various stills might show:

Crude to stills	100.00% Crude
Cracking stock to stills	126.71
Pressure still tar to stills	1.47
Total to stills	228.18%

Let us assume that the operations in the refinery required the production of five grades of gasoline and naphtha which might be produced in the following amounts:

64-66 Gasoline	1.62% Crude
60-62 Gasoline	1.60
USM Gasoline	47.28
437 End Gasoline	9.91
450 End Naphtha	8.35

Keeping the Refinery Operating Men on Tiptoe

CONSIDERABLE discussion was aroused when the accompanying paper was presented at the meeting of the Petroleum Division of the A.I.M.E. in New York Feb. 22 by Mr. Miller. Because the paper covered a system of control so workable and practical there were a good many questions asked about its application to refinery practice.

E. W. Isom of the Sinclair company stated in reply to a question that he regarded 1 cent a barrel of crude put through the plant as a reasonable charge to pay for such technical control as that described, not only for actual manufacturing operations but also for investigating processes developed by company men or offered to the company by outsiders. H. W. Camp, general superintendent Empire Refineries, was of the opinion that 1 cent a barrel would more than pay for an excellent control organization.

Investigation of outside processes will be discussed in Part 3 of this series next week, "Investigation of New Processes—Patent Searches". Part 1 appeared on Page 76 of the Feb. 29 issue.

The individual operations in the bogey workup should be reported as follows:

A. Quality of Crude

I. Tests on Charging Crude

Gravity	35.5
Flash	RT
Pour	20
BS	0.3%
Sulfur	0.36%

Over	137° F.	
10%	247	72.0 gr.
20	316	59.6
30	385	51.4
40	469	44.6
50	555	38.8
50% Bottoms	.....	22.8

II. Towerstilling Crude

Charge 100% Crude Cut	Grade	% Crude	Gravity 35.5 Gravity
Over to 43.1	400 End Distillate	35.0%	58.3
Over to 41.8	91/392 Goods	38.0	57.0
Over to 40.3	437 End Distillate	41.0	55.9
Over to 39.9	450 End Distillate	43.0	54.9
Bottoms	Reduced Crude	55.5	24.9
Loss		1.5	
		100.0%	

1. Tests on Products

Grade	400 End	91/392 Goods	437 End	450 End	Bottoms
Gravity	58.3	57.0	55.9	54.9	24.9
Initial	123	124	124	126	.....
10%	176	176	182	184	.....
20	208	209	216	218	.....
30	231	235	246	250	.....
40	252	257	266	274	.....
50	276	282	294	304	.....
60	294	312	321	332	.....
70	316	335	351	366	.....
80	340	358	362	392	.....
90E	368	390	414	451	.....
End	400	420	438	.....	.....
% at 221	25.5	24.5	24.0	21.5	.....
284	55.0	51.0	47.0	44.0	.....
392	.....	90.5	84.0	80.0	.....

The purpose of the above breakup is to provide accurate data on quality of crude being charged from month to month. It is, of course, apparent that no refinery could operate commercially and turn out a single grade of gasoline like any of those shown. Sales department demands are varied and many grades must be manufactured. Runs for grades of gasoline specified in the foregoing paragraph are made as follows:

I. Towerstilling Crude

Charge 100% Crude Cut	Grade	% Crude	Gravity 35.5 Gravity
Over to 47.8	60-62 Distillate	27.00%	61.6
60-62 grade finished		1.60	61.6
		25.40	
47.8 to 42.2	Gasoline Distillate	10.00	
USM Gasoline finished		35.40	57.5
42.2 to 40.2	W. W. Distillate	7.00	41.2
Bottoms	Reduced Crude	54.50	25.4
Loss		1.50	
		100.00%	

*Chief chemist Sinclair Refining Co.
†Process chemist, Sinclair Refining Co.

Tests on Products

Grade	60-62 Grade Refinery	60-62 Grade Bogey	USM Grade Refinery	USM Grade Bogey	W. W. Kerosene Refinery	W. W. Kerosene Bogey
Gravity	62.7	61.6	58.3	57.5	41.0	41.2
Initial	104	116	100	124	387	402
10%	152	167	165	180	415	424
20	182	192	205	208	426	434
30	208	210	233	233	432	438
40	227	227	258	256	438	441
50	244	243	280	278	444	444
60	260	260	304	304	451	447
70	277	279	330	328	460	449
80	300	294	356	354	471	454
90	328	323	386	387	490	459
End	389	364	426	419	536	479
% at 221	37.0	36.5	25.5	25.5 Fl.	148	90
284	73.0	73.0	51.5	52.0 Vis.	450	400
392	97.0	.....	91.5	91.0		

II. Reduced Crude and Pressure Tar to Coke

Charge 55.87% Crude — Gravity 25.2

Cut	Grade	% Charge	% Crude	Gravity
Distillate	PS Stock	94.35%	52.78%	31.8
Bottoms	Coke	5.2	2.91	
Loss		0.5	0.28	
		100.0%	55.97%	

III. Skimming of PS* Stock (Refinery Figures)

Charge 132.36% Crude — Gravity 31.0

	% Charge	% Crude	Gravity
Heavy Rerun Naptha	4.27%	5.65%	52.6
PS Charging Stock	95.73	126.71	
	100.00%	132.36%	

IV. Process Still Operation (Refinery Figures)

	% Charge	% Crude
PS Distillate	30.25%	38.46%
Gas Oil	54.22	68.70
PS Tar	1.16	1.47
**PT Flux	11.70	14.83
Loss	2.57	3.25
	100.00%	126.71%

V. Naphtha Rerun Sources of Stock

	% Crude	Gravity
Heavy Naphtha	5.65%	52.6
PS Distillate	38.46	50.3
Total	44.11	50.4

Towerstilling Rerun Naphtha

Cut	Grade	% Charge	% Crude	Gravity
Over to 49.4	64-66 Gasoline	47.00%	20.73%	63.9
64-66 finished		*3.67	1.62	63.9
		43.33	19.11	
49.4 to 41.1	Gasoline Stock	20.00	8.82	
US Motor made		63.33	27.93	
US Motor finished		*26.93	11.88	
		35.40	16.05	
41.1 to 40.8	Gasoline Stock	2.00	0.88	
437 end made		37.40	16.93	
437 end finished		*22.47	9.91	57.0
		15.93	7.02	
40.8 to 40.3	Gasoline Stock	4.00	1.76	
450 end finished		*19.93	8.78	54.0
Bottoms		*25.50	11.25	35.0
Loss		1.50	0.67	
		100.00%	44.11%	

Tests on Products

Grade	64-66 Refinery	64-66 Bogey	US Motor Refinery	US Motor Bogey	437 End Refinery	437 End Bogey	450 End Refinery	450 End Bogey
Gravity	65.1	63.9	58.3	58.1	57.0	57.0	53.2	54.0
Initial	98	102	100	116	103	120	107	126
10%	144	154	165	176	172	178	183	192
20	168	171	205	210	213	216	231	234
30	200	199	233	236	243	246	269	268
40	219	218	258	262	269	268	304	297
50	236	235	280	282	293	288	333	322
60	249	248	304	302	319	312	353	343
70	264	262	330	319	343	330	383	363
80	280	276	356	334	368	348	403	378
90	309	290	386	357	399	366	420	391
End	365	320	428	378	433	342	442	406
% at 222	41.5	41.5	25.5	24.5	23.0	22.5	18.0	17.0
284	81.5	86.5	51.5	51.0	47.0	48.0	34.5	35.0
392	.....	.....	91.5	.....	87.5	.....	75.5	90.5

Summary of Products

Grade	Refinery % Crude	Refinery Gravity	Bogey % Crude	Bogey Gravity
64-66 Gasoline Distillate	1.62%	65.1	1.62%	63.9
60-62 Gasoline Distillate	1.60	62.7	1.60	61.6
USM Gasoline Distillate	47.28	58.3	47.28	57.7
437 End Gasoline Distillate	9.91	57.0	9.91	57.0
450 End Naphtha	8.35	53.2	8.78	54.0
W. W. Distillate	3.24	41.0	7.00	41.2
Furnace Oil	7.20		None	
Flux	11.47		14.83	
Miscellaneous	1.26		0.37	
Coke	3.87		2.91	
Loss	4.20		5.70	
	100.00%		100.00%	

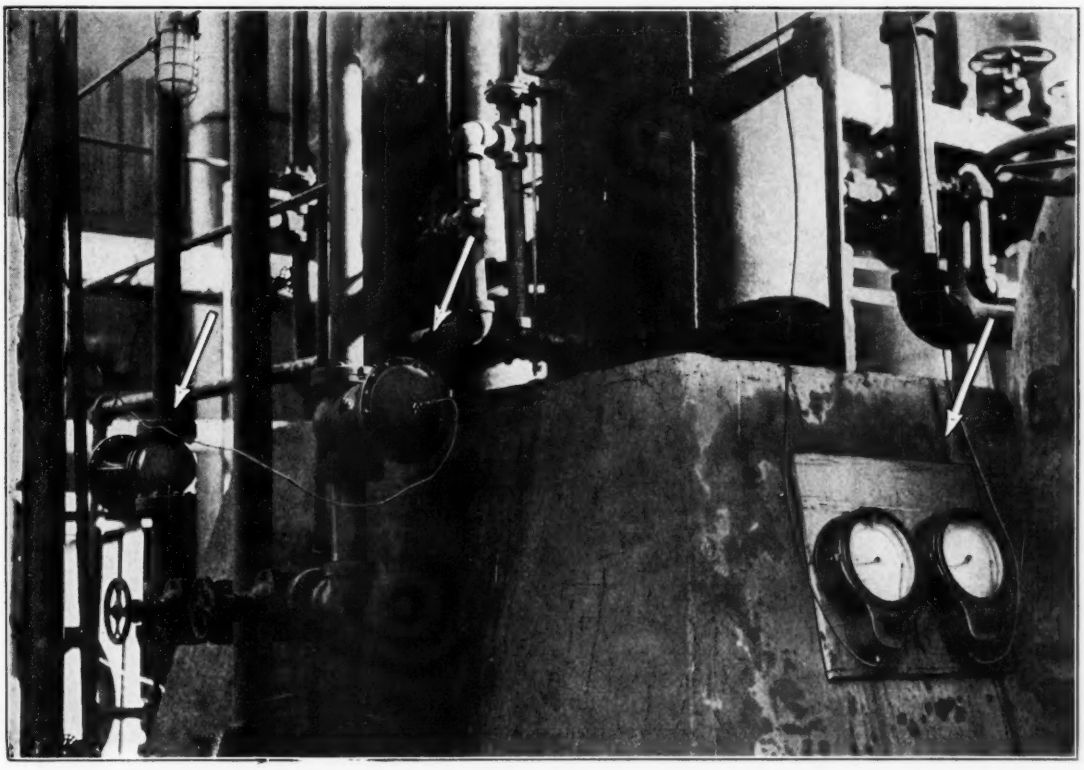
*PS means pressure still.
**PT means pressure tar.

A careful examination of the type bogey barrel workup shown above reveals the fact that a number of points require explanation. It was assumed in this case that all crude and rerun naphthas in the refinery were handled in continuous tower stills where the degree of fractionation commercially obtainable could never equal that of a laboratory batch unit, tower equipped, performing the same type of operation. For this reason the refinery products always show a wider boiling point range than the corresponding products from a laboratory batch still. This is seen quite plainly by studying the distillation tests throughout the workup. However, it so happens that when some intermediate point (per cent off at 221, 284 or 392 degrees Fahr.) is taken as the control, the yields of products can be matched to a fraction of a per cent on the crude. Again, it must be borne in mind that refineries are obliged to produce certain intermediate products, such as furnace oil and the like, which contain potential motor fuel stocks. In judging the efficiency of refinery operations, low boiling point materials so diverted should be deducted from the bogey figures.

IN THE type example, the furnace oil made contains enough light ends to account for the shortage of total gasoline production. The place where the refinery statement shows up short is, however, on the production of water white kerosene. This amounted in the above case to about 4 per cent or more on the crude.

A superintendent who has bogey barrel workups on his crude each month is in a position to select the units in the plant where yield is falling below expectation and from experience is able to judge whether additional recovery will pay. In the type case presented for your consideration, it is quite likely that the loss in through-put capacity suffered in attempts to obtain full yields of water white stock would cost more than could be compensated for in the value of the small increased percentage yield involved.

The details given on workups of crude oils and bogey samples from the refinery all deal with a single operation, namely, distillation. This is by far the most important single operation in a plant, but there are many others of only slightly less consequence. The nature of these secondary operations is such that good results can only be obtained when tests are conducted on a semi-commercial scale. Certain other activities of a technical staff call for test work under like conditions, so it will be convenient to discuss these matters under a separate head.



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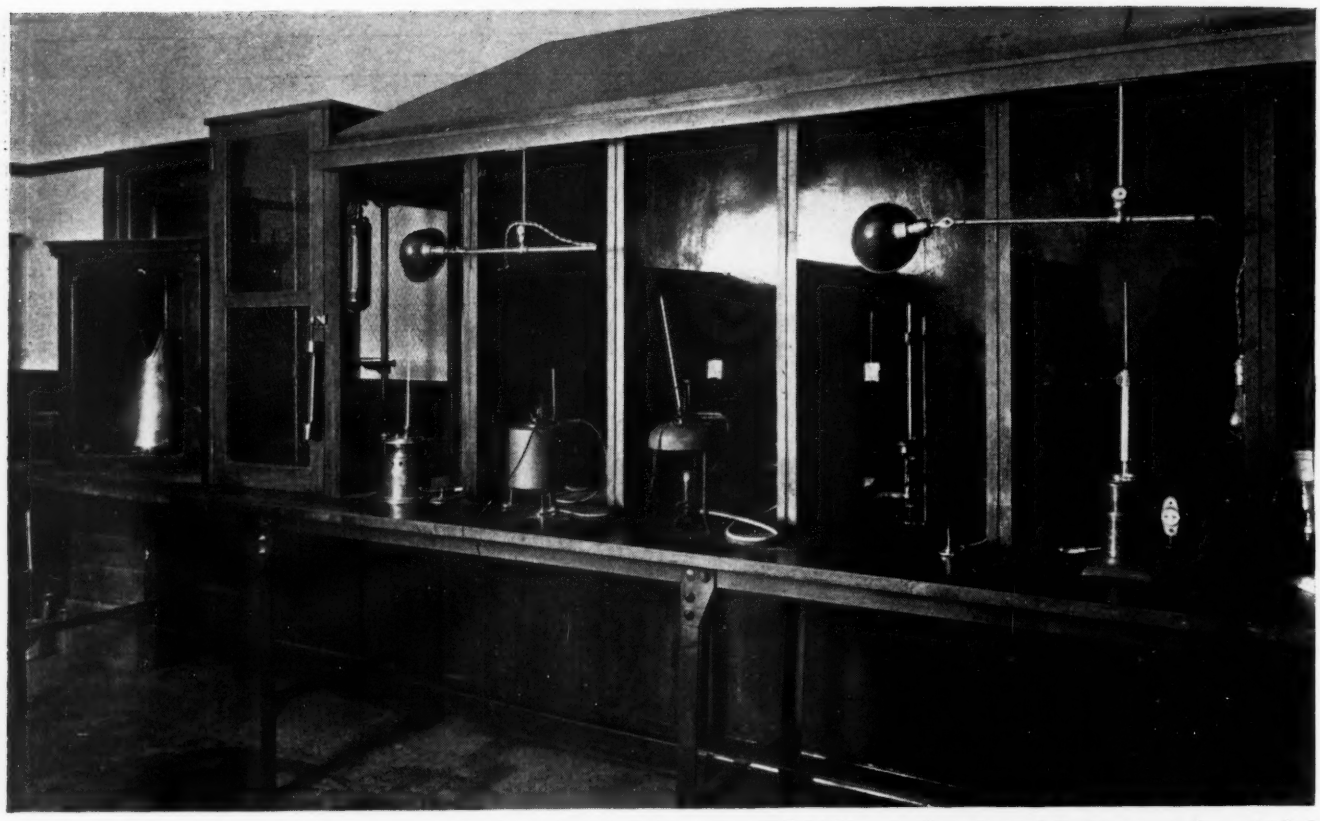

Some of the oil testing equipment in the laboratories of the Atlantic Refining Co., Philadelphia. At the extreme left, in a case, is a standard 5-gallon measure; next in order from the left are: Luchaire (French) flash testing apparatus; Abel-Pensky flash testing apparatus; Pensky-Martens flash testing apparatus; Cleveland Open cup apparatus; Tagliabue Open cup apparatus

Application of Technical Control

THE type of work we are now to consider has to do with check-ups on refinery operations where full scale commercial operations have to be met with. For this purpose, a plot of ground at some point convenient to all refinery services, such as electricity, steam, air, and so forth, must be enclosed and space allotted for tanks, lines, stills, pumps, agitators, filters, and other pieces of refinery equipment.

In these should be placed units built on a scale to handle stocks in carload lots, if necessary—probably, on scales ranging from 20 barrels up to 100 or 200 barrels per day. In addition, ground must be set aside for the construction of new pieces of apparatus developed within the organization or offered to it by outside parties. The staff chosen to handle this unit must be selected with care and the top man must have special talent for the work. He has to know by instinct how to handle any problem and be able to pick merits or flaws in any operation to which he is giving his attention.

The experimental laboratory of a modern refinery. On the right are the small experimental stills, condensers and so on. At the back, center, is a steam jacketed kettle and various equipment is ranged along the left side of the room

In fact, to be a genuine success he must eat, drink and breathe petroleum. The personnel of his force should be made up largely of young, technically trained men who have the ability to grasp the essential points in problems and the determination to make a thing work or else to find out the reason why it will not. The best slogan such a group of men can have is "Because a thing failed the hundredth time is no proof it will not work on the 200th attempt."

The work carried on in this plant has to do with study of routine refinery operations having for its purpose to find out whether the products made are of the best quality and whether or not costs are being held at the lowest figures possible. The important points to consider are through-put, efficiency of reactions where reagents are employed, and the good or bad quality of the final end products.

IN ADDITION to this, the matter of corrosion, the wearing out of parts of equipment, the frequency of replacement, and other practical problems, should be borne in mind. This method of operating has a great advantage over full scale work for the reason that all steps in a given process are directly under the eye of the man in charge. He is able to detect weak spots that would not be observed by the refinery staff in routine operations. In this way ideas for improvements or for entirely new processes are conceived.

When a change in an old process is proposed or an entirely new method for doing a certain piece of work suggested, experimental apparatus is at once built to incorporate the new practice and put it in routine service. Months and even years of study must be devoted to the new unit before results of a satisfactory nature can be produced.

The apparatus may have to be changed a dozen times in this period to meet all refinery conditions. Having passed this stage, the apparatus is fitted up just like a normal refinery unit of the class to which it belongs. It is then operated on a scale having a through-put of 100 to 200 barrels and all test data is secured based on regular refinery conditions. After a series of such runs in which costs, yields, and quality of products shade those for current operations, the proposition is in shape for commercial application.

When inventors with nothing more than paper patents offer propositions to the company, they may be asked to join the experimental staff for a period and work out their propositions at the company's expense, the understanding being that the inventors will share in the profits from any commercial use of their basic ideas. What usually happens is that the ideas, if good, are taken over by the company and developed by the experimental staff. In that case the inventor is generally satisfied with a modest royalty.

Another type of inventor may come to the company with his process all worked out. If the preliminary experiments give promise of real money value he will be asked to construct a semi-commercial unit at the experimental plant and instruct the regular force in its care and operation. It will be operated to produce the specific products which the refinery has to produce. In the vast majority of cases it will be found that the new process will not work on the stock supplied or else the costs are all out of proportion to the value of the products produced. Occasionally a good process is found and the chance that such a one will be overlooked makes it necessary to investigate them all.

The varied character of work done in such a plant calls for the exercise of a great deal of ingenuity in constructing apparatus. The idea is to have one typical piece of each kind of apparatus likely to be required in such shape that it can be incorporated in any arrangement of apparatus or process being studied. The basic operations dealt with are distillation, chemical treating, dewaxing and filtration, most of which have to be performed in a continuous manner. The first object is always to produce marketable specification products.

Ways often have to be devised for small scale testing of products at various intermediate stages in a process and from these have been developed many of the newer types of refinery processes. Among these groups of activities belong such operations as mechanical stirring operations of the oils in place of the old air blowing system, contact filtration of oils with fine earth as opposed to the old percolation of oil through porous earth, the dewaxing by centrifuge or filter aids as against the older methods of cold settling or pressing, the reactivations of decolorizing mediums in multi-hearth furnaces, such as are now widely used, instead of an internally fired rotary furnace, treatment of oils in the vapor phase with solid reagents in place of liquid phase treatment with liquid reagents. The details of methods and descriptions of apparatus used have no place in this paper for the reason they have no direct bearing on technical control.

BRADFORD, Pa., March 3.—William Jones has been made sales manager of the McKean County Oil Refining Co. which has its plant at Farmers Valley, Pa., but headquarters here. He succeeds Frank Moore who has been sales manager. Mr. Jones has been sales manager of the Bradford Gasoline Co., an affiliated corporation.

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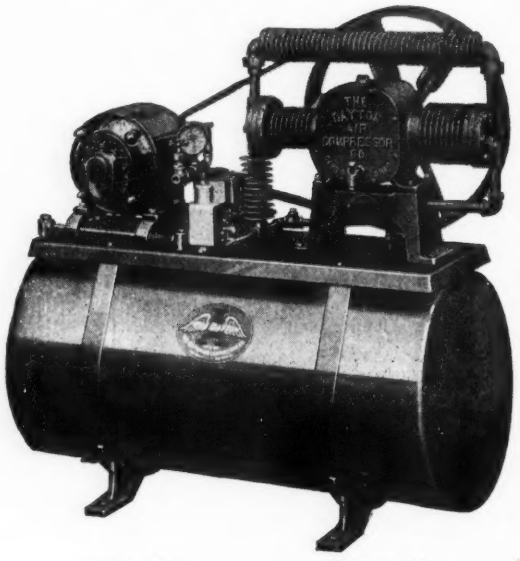

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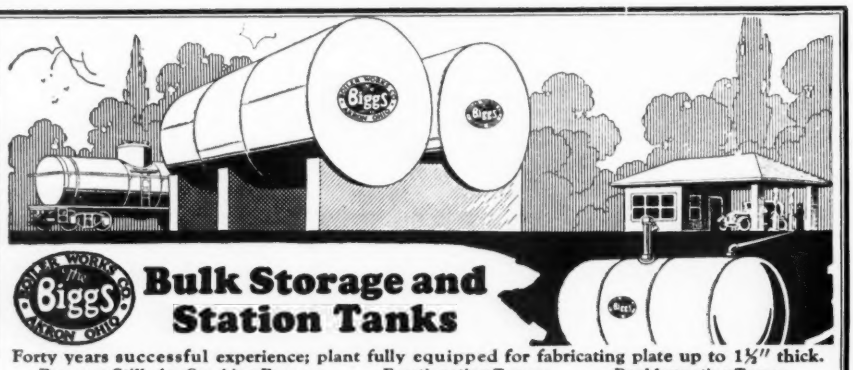

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Warns Against Government Ownership of Railroads

TULSA, March 3.—Sir Henry Thornton, president of the Canadian National Grand Trunk Railways of Montreal, was the guest of honor at the eleventh annual banquet of the Traffic Club of Tulsa at the Mayo hotel on Feb. 24. More than 1,000 railroad and oil company executives, traffic managers and shippers of other commodities were present to honor the former American railroad man who won such renown during the war by his direction of Allied transportation.

In his address to the shippers and carriers Sir Henry warned against the United States undertaking the national ownership of railways no matter how successful the system may appear to be in Canada.

Sir Henry was welcomed in an address by D. W. Moffitt, vice president of the Mid-Continent Petroleum Corp. Judge Summers Hardy, counsel for the Sinclair Oil & Gas Co., was toastmaster.

Announce Some Subjects For Gas Conference

NEW YORK, March 1.—Some subjects for discussion at the American Gas Association distribution conference in conjunction with the annual conference at Chicago, April 12 and 13 have been announced.

J. K. Crowell will report latest developments on pipe coatings and corrosion. It is expected that the committee on pipe joints will have a paper, and there will be a paper on pipe joints in connection with high pressure transmission of gas. J. H. Braine, of the Brooklyn Union Gas Co., will report on portable distribution equipment. Bar connections will be the subject of E. S. Umstead, of the Providence Gas Co.

The life of pipe will be given by R. G. Griswold, of Henry L. Doherty & Co. Automatic devices for raising pressures at district governors will be discussed by E. H. Enander, of the Public Service Co. of Northern Illinois. F. A. Lydecker, of the Public Service Electric & Gas Co., will discuss long distance high pressure transmission of gas.

DOVER, N. H., March 2.—Rowell & Watson, a recently organized partnership here, has become agent for the Tide Water Oil Co. to distribute Tydol gasoline and Veedol motor oils in this territory. A super service station is now being erected here and several additional ones will be built in the spring.

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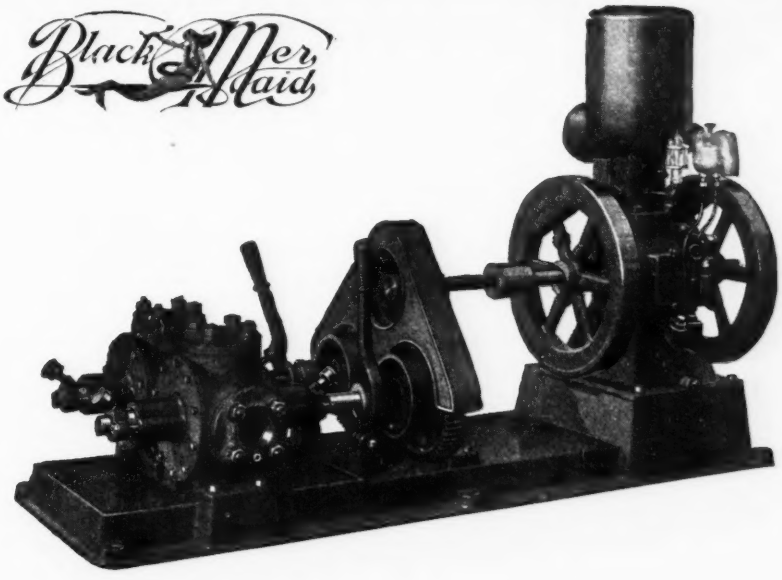

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The Shell Still, Inside or Outside Fired, As a Big Volume Distilling Unit

By C. W. Stratford

Part 2

Presented before Refinery Engineering Division, A. I. M. E., New York, Feb. 22

Burning Explosive Mixtures in Furnaces

VAPORIZING very high percentages of crude in one pass through the equipment without any cracking action that would injure the quality of lubricating distillates is one of the requirements of modern distillation, Mr. Stratford points out. He proposes combustion in still furnaces as clean as that in an automobile cylinder, accomplished by introducing an explosive mixture into the furnace.

Spinning the gases of combustion through the heating tubes to keep the walls of the tube free from carbon and speed up the rate of heat transfer and a still in which the oil is forced at high speed through a nest of spiral tubes are some of his suggestions.

He states that the flame burst is less luminous when using gas fuel than with oil or powdered coal and hence the absorption of radiant heat is slower. He recommends burning a small quantity of fuel oil with the gas, where gas is used, to speed up the radiant absorption

IN ALL development work, it is ofttimes discouraging to sense the rapidity with which our most cherished conception, seemingly new, passes into near-obsolescence. This frequently occurs during the period between completion of design and readiness for operation.

With the background of facts established by commercial operations disclosed in Part 1 of this article, published on page 63 of Feb. 29 issue of NATIONAL PETROLEUM NEWS, and profiting by experience had during the development period, the writer wishes to propose another reasonable forward step and apply what appears now to be an even more economical method of modifying shell stills.

On referring to an analysis of installation costs of outside fired oil circulation stills, it is seen that expenditures made for raising the stills and rebuilding masonry into satisfactory fire boxes with air cooled side walls and floor represent a high percentage of the total cost of modification.

This analysis naturally suggests the desirability of finding ways and means of reducing or entirely eliminating the cost of rebuilding old shell still settings. Where present fire boxes are satisfactory for increased firing rates, additional masonry cost is eliminated.

Turning to other lines of endeavor for inspiration, we find the Scotch boiler equipped with a firing tube and the burner set directly in the end of it. No trouble is experienced with the maintenance of the fire tube and high transfer rates are obtained to non-mechanically moved water.

ALL over Europe there are hundreds of shell stills equipped with one or two firing tubes. The standard Bruenn-Koenigsfelder type of shell still used in Europe is approximately 30 feet long, 10 feet in diameter and fitted with two firing tubes 32 inches in diameter. The surface of two such tubes is greater than that available on the same still when placed above a fire box and fired on the outside in the normal way.

Combustion for Bruenn-Koenigsfelder type stills is accomplished in a Dutch oven attached to the front of the still and the incandescent gases pass from this combustion chamber to and through the firing tubes.

No difficulty is had in the maintenance of the heating tubes. Attempts at direct firing into the tubes of Bruenn-Koenigsfelder stills have been unsuccessful because of coking and burning of the oil on heating surfaces.

It is logical to conclude that oil circulation can be applied even more advantageously to the heating tubes of this type of still, than is the case with oil circulation outside fired shell stills in which all sediment in the oil tends to settle to the bottom, requiring unusually vigorous circulation of oil to prevent deposition and coking of the bottom.

THE following proposed plan of modification appears to meet all requirements of reduction in cost and promises even better efficiency. Assuming that a still 10 feet in diameter and 30 feet long were to be converted, the application of a single fire tube of about 3½ feet in diameter would give ample heating surface and furnace volume to satisfy all necessities of combustion and heat absorption, by the oil.

This tube may be offset from the center of the still to allow for the installation of a submerged vertical pump.

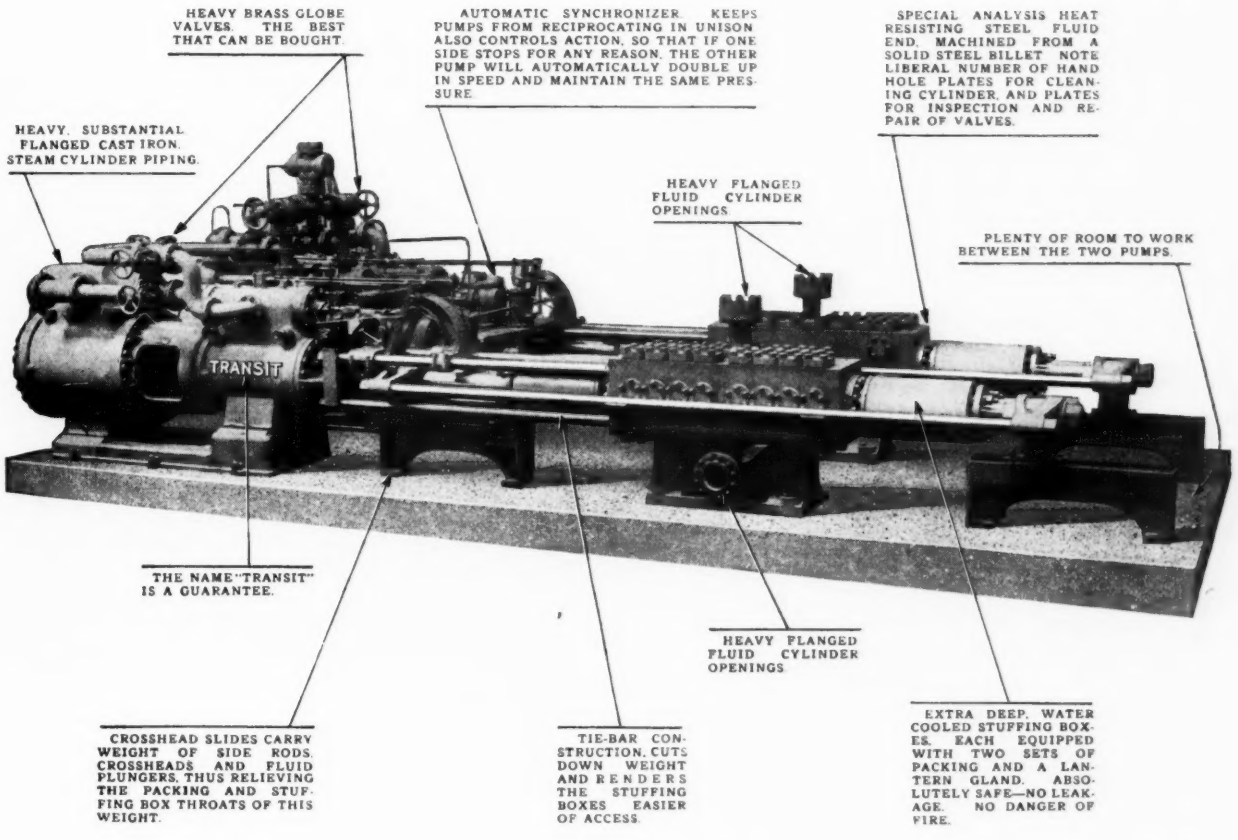
The oil distributing manifolding can then be wrapped around the firing tube and the nozzles directed so as to impinge jets of oil against it. Tests show that the sheet flow of oil circulation covers this type of surface just as perfectly as it does that of the bottom of an outside fired still.

A mechanical atomizing burner can then be directly applied to the end of the fire tube. In order to promote convection transfer from incandescent gases to the heating surface, it is also proposed to spin the gases of combustion at high speed, giving a velocity over the heating surface of more than 100 feet per second, for the entire length of the tube.

This is now being successfully done in some fire tube boilers. The removal of spinning gases from the stack end of the heating tube demands a special solution. This is accomplished by unwinding them through a volute.

Spinning energy can thus be economically converted into pressure to drive the issuing gases through a

Features of TRANSIT HOT OIL PUMPS *visualized* for you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AUTOMATIC SYNCHRONIZER. KEEPS PUMPS FROM RECIPROCATING IN UNISON. ALSO CONTROLS ACTION, SO THAT IF ONE SIDE STOPS FOR ANY REASON, THE OTHER PUMP WILL AUTOMATICALLY DOUBLE UP IN SPEED AND MAINTAIN THE SAME PRESSURE.
SPECIAL ANALYSIS HEAT RESISTING STEEL FLUID END, MACHINED FROM A SOLID STEEL BILLET. NOTE LIBERAL NUMBER OF HAND HOLE PLATES FOR CLEANING CYLINDER, AND PLATES FOR INSPECTION AND REPAIR OF VALVES.
HEAVY, SUBSTANTIAL FLANGED CAST IRON STEAM CYLINDER PIPING.
HEAVY FLANGED FLUID CYLINDER OPENINGS.
PLENTY OF ROOM TO WORK BETWEEN THE TWO PUMPS.
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HEAVY FLANGED FLUID CYLINDER OPENINGS.
CROSSHEAD SLIDES CARRY WEIGHT OF SIDE RODS, CROSSHEADS AND FLUID PLUNGERS, THUS RELIEVING THE PACKING AND STUFFING BOX THROATS OF THIS WEIGHT.
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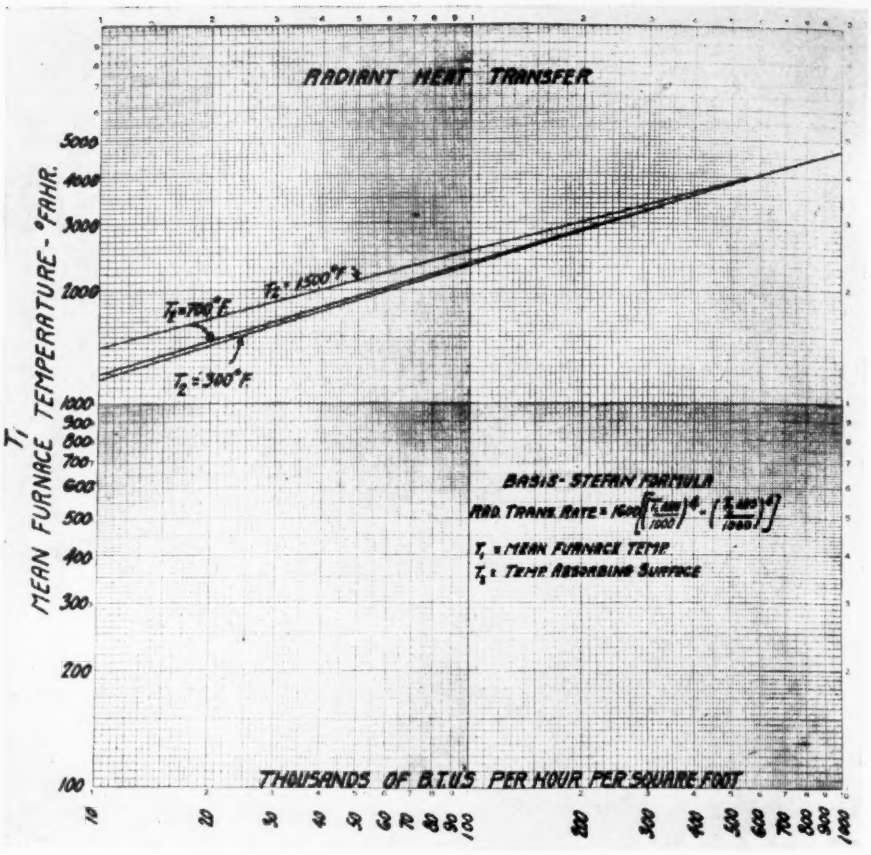
circulatory heating system, such as an air pre-heater or convection bank or through both. Such a combination assures high overall thermal efficiency of the unit.

It is obvious that this plan would be good from many points of view. All expensive masonry is eliminated. There can be no loss of combustion gases at high temperatures from such a tubular combustion chamber, neither can there be any infiltration of cold air to decrease efficiency.

In view of high transfer rates recently obtained in fire tube boilers, the application of a similar fire tube surface in a shell still would very probably result in greatly increased transfer rates per square foot of heating surface compared to that already obtained in an outside fired oil circulation still.

This compressed type of high capacity heating unit is adaptable to many diversified uses, being applicable to steam boilers and to heaters of other liquids as well as oil.

Progress in petroleum refining has recently developed a decided movement toward vaporizing greatly increased percentages of crude charged to distilling units. The economic necessity for better realizations on refining operations has had a controlling influence on this tendency.



HIGH percentage vaporization often necessitates dividing the heating operation into two stages. In the first stage, gas oil and more volatile distillates are separated. In the second stage of distillation at high temperatures, for the recovery of wax distillate and more viscous lubricating stocks, no particular difficulties are encountered in vaporizing fairly high percentages of the charge until the temperatures in the neighborhood of 600 degrees are reached.

In distilling most crudes undesirable cracking occurs at temperatures of between 600 and 750 degrees Fahr., especially when the period of heating is long. Such cracking always greatly reduces yield of lubricating distillates and it may seriously interfere with recovery of wax from distillates of paraffin base.

To eliminate or reduce cracking several methods have been employed. A large quantity of steam introduced in the evaporating chamber of a distilling unit lowers temperatures required for vaporizing a given percentage of distillate but large quantities of steam are expensive.

Distillation under high vacuum with steam injection lowers further the necessary temperature of oil in the heater. Distillation of heavy crude under high vacuum without steam has not proved to be altogether satisfactory. Refining by all of the methods noted has been accompanied by an undesirable degree of cracking when the heating is done in practically any type of oil heater of conventional design where relatively low flow velocities are maintained and the heating time is long.

Time Factor Important in Cracking

THIS indicates a need of improving the means of heating hydrocarbon liquids when decomposition is to be avoided.

Data from the cracking art shows clearly that chemical decomposition of hydrocarbons by heat is greatly influenced by the period of time during which oils are held at high temperatures. In most heaters now available the liquid volume capacity divided by charging flow rate through heater gives a time factor that is many times too large to avoid a "soaking" effect and cracking where it is not desired.

Unquestionably there is an urgent need of equipment in which oil may be heated to desired terminal temperatures within an extremely short period of time.

The ideal system would be one in which the temperature of distillation could be reached in a period of a few seconds, vaporization accomplished in a zone of lowest possible hydrocarbon pressures, to keep down terminal temperatures, and the distillates rapidly cooled after fractionation or separation.

How can such specifications be met? In the first place, very rapid heating of oil can only be done with an absorbing surface to which practically all heat is transmitted by radiation at high temperatures. The oil in turn must absorb this transmitted heat as fast as delivered with lowest oil film temperature.

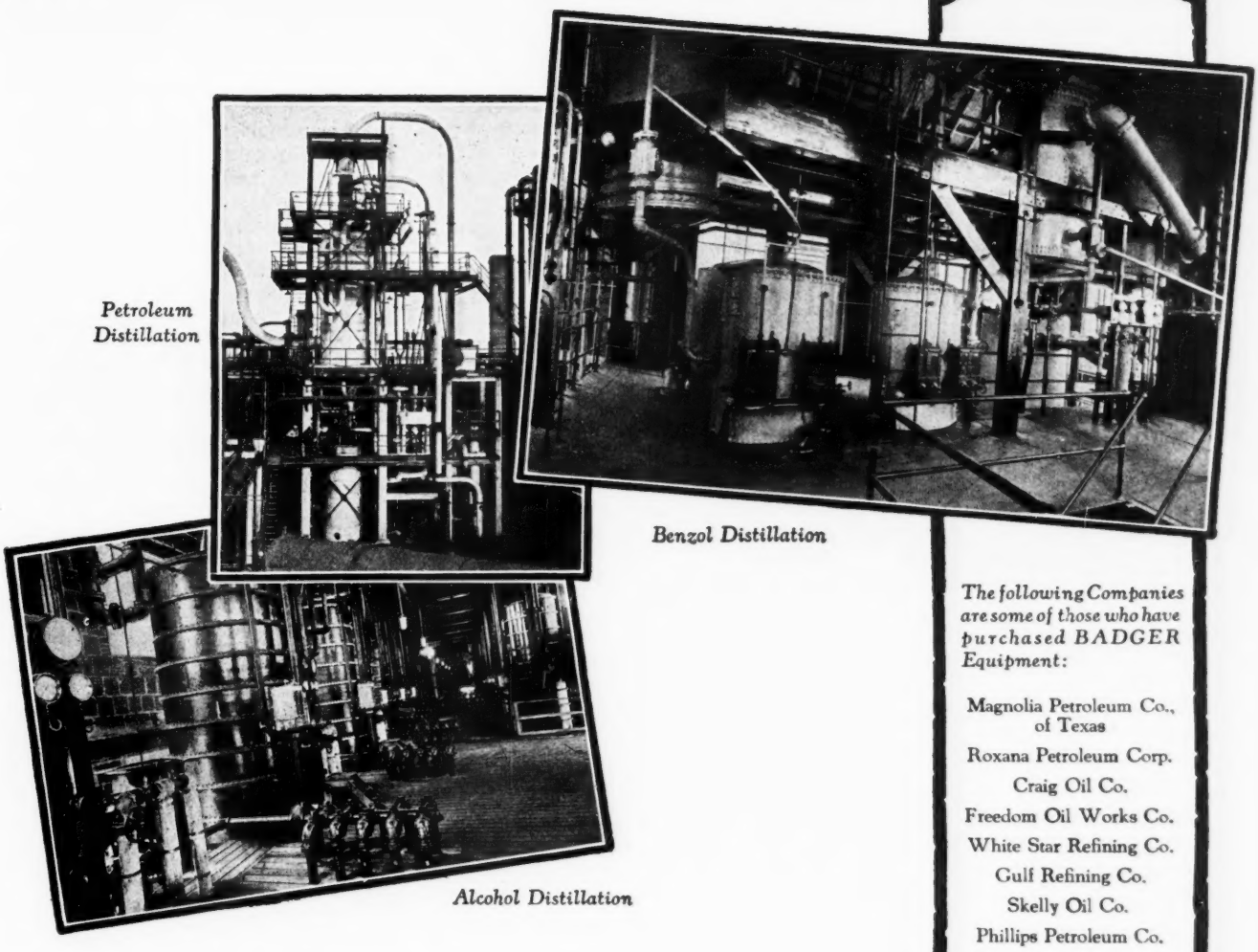
The time factor must be small and the total liquid volume of the heater must also be small, which is simply another way of stating that the specific heat transfer rate must be unusually high.

Of all direct heater designs that might be satisfactory for this purpose, there are principally two that stand out, in the opinion of the writer, as heaters which seemingly have a good chance of ultimate success. The first conception is a heater constructed with tubes of small diameter, spirally wound, and the second conception is an inside fired heater with oil circulation in the annular space between the firing tube and the collector tube.

IN THE construction of the first with small tubes, it would be preferable to wind the spiral elements around a refractory core and fire it at the top in the annular space between the coil of tubes and the inside of the circular furnace enclosing it. This arrangement would permit the utilization of centrifugal force, developed by high velocity flow of oil in the spiral tubes, to throw a liquid oil covering over the surface exposed to highest absorption rates in the furnace.

Any vapor formed could rise on the inner part diameter of the tube which would not be exposed to radiant heat.

The chief disadvantages of such a



Petroleum Distillation

Benzol Distillation

Alcohol Distillation

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small tube heater are high pressures required to drive the oil through the coils, difficulty or rather impossibility of cleaning and the low heating capacity of the back half of the tubes that are not exposed to fire. It would be imperative to operate at a fixed, full rate with optimum velocity of oil flow to avoid coking.

Oil circulation applied to this special heating problem apparently would meet requirements of operation and presents no particular difficulties of construction or maintenance. A circulation type of heater would comprise a firing tube against the outer surface of which the oil to be heated is impinged.

Surrounding the firing tube is placed a concentric collector tube enclosing a thin annular space of small total volume for the flow of oil. Manifolding for the uniform distribution of oil from the discharge of the circulating pump to the nozzle is attached to the outer shell as is also the manifolding for receiving the heated oil as it is forced from the annular space through slots and passes directly to the vaporizer.

Burning of Sheet Guarded Against

THE circulating pump, being incorporated in the vaporizer, receives the separated oil, discharging a portion from the system and sending the remainder back through the heater with the fresh feed. Energy put into the circulating pump is usefully expended in imparting desired high velocity to the sheet flow of oil over the heating surface.

All of this surface "sees" the fire and transfers heat at a uniform rate. Inter-connection of power for the fuel set and circulating pump would make burning of the sheet improbable. The firing tube could be easily withdrawn for inspection.

It is evident that charging rate to this heater would not influence velocity of oil over the heating surface, though the time factor would be changed.

Before a rational design of any type of heater can be undertaken, it is imperative to first study the source of heat to be used and the mechanism of combustion. The subject of combustion is entirely too extensive to permit much discussion in this paper. However, the writer believes that it is worth while to touch on a few of the frequently neglected high spots.

Fuel Is Largest Item of Refining Cost

THE petroleum industry as a whole uses a tremendous quantity of fuel. The largest single item of expense in distilling oil is that for fuel, yet its proper utilization has received relatively little attention.

In all considerations of the economical use of fuel too much emphasis cannot be given to the importance of carefully analyzing all the factors that influence combustion. Combustion in any oil heater should be just as complete as that which occurs in the cylinder of an internal combustion engine, fed with a correctly proportioned mixture of air and fuel.

An oil burner should provide means for easy adjustment of air-fuel ratio, should comprise a circulatory fuel oil feed for control of fineness of fuel atomization, and it should be capable of intimately mixing the air and atomized fuel. In addition, it should also be equipped with a tangential air-inlet diffuser giving control of the revolutions per minute of the components of combustion passing through the firing venturi.

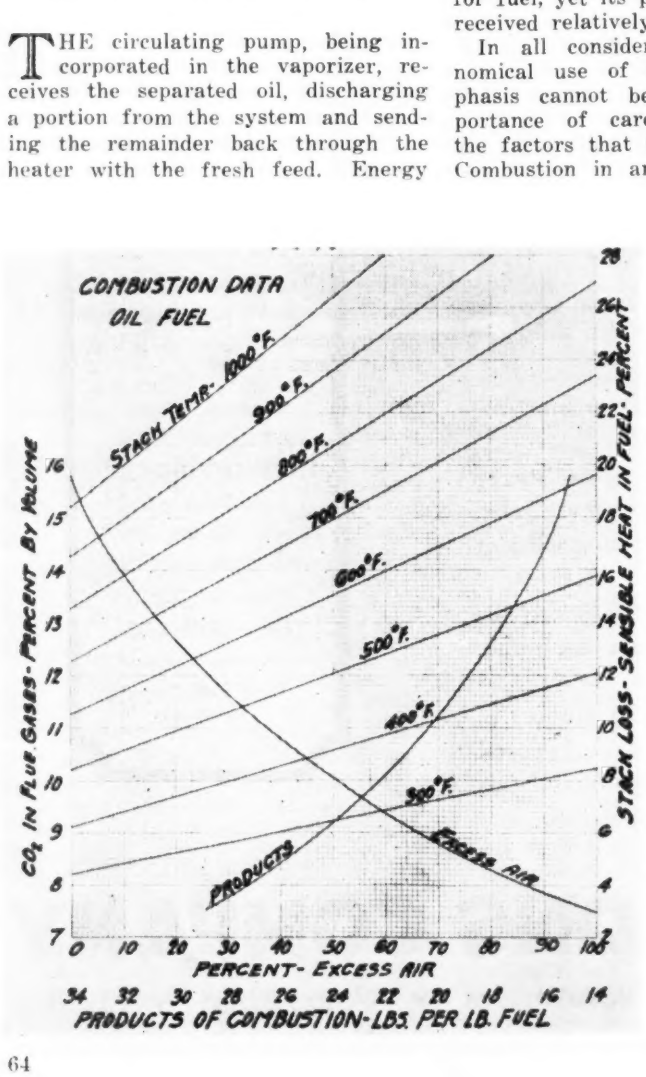
Such a burner will feed an explosive mixture into the combustion chamber. There is no danger whatsoever in its employment, providing a torch for lighting is always introduced before injecting the mixture.

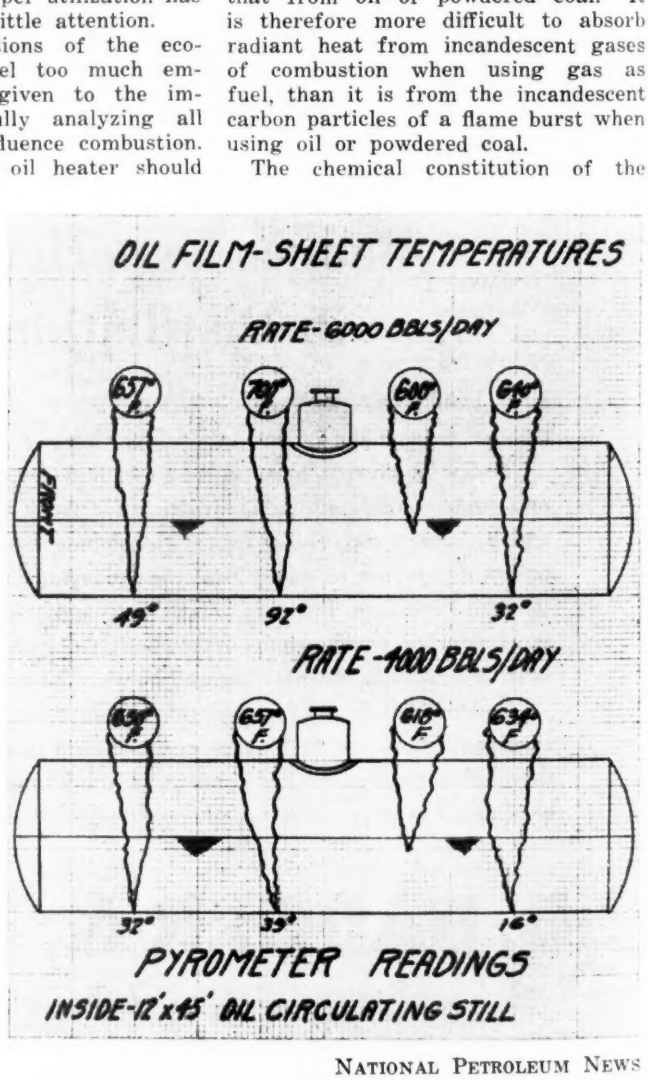
The requirements for burners using combined oil and gas, gas alone, or powdered coal are identical. Only such carbureting burners will permit the realization of maximum fuel economy.

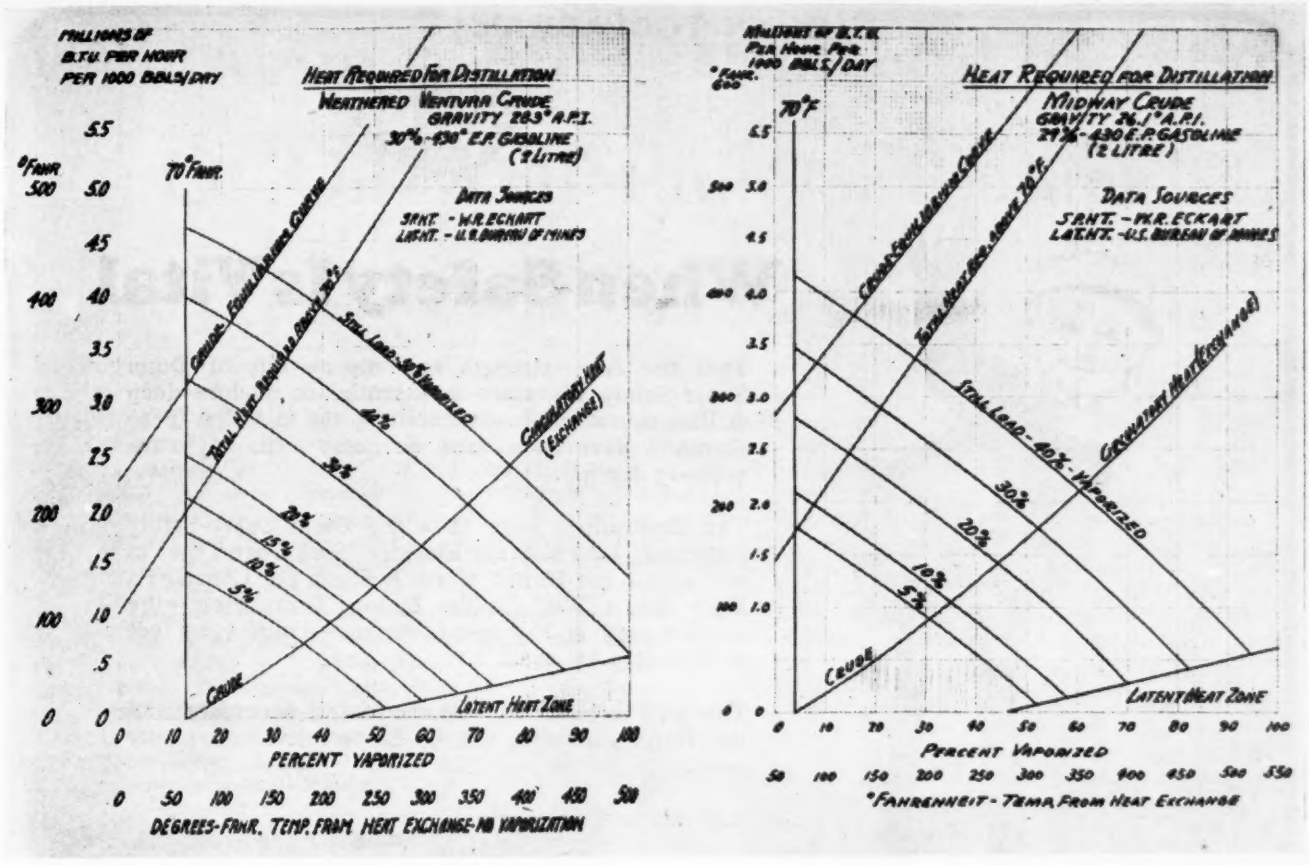
Gas Flame Burst Less Luminous

THE flame burst, using gas as fuel, is much less luminous than that from oil or powdered coal. It is therefore more difficult to absorb radiant heat from incandescent gases of combustion when using gas as fuel, than it is from the incandescent carbon particles of a flame burst when using oil or powdered coal.

The chemical constitution of the







gases of combustion also affect radiant absorption. If high radiant absorption is to be obtained with gas fuel, it is advisable to burn at least a small quantity of fuel oil with it. All flame burst temperatures are greatly elevated by increase in temperature of the air feed to combustion.

For this reason, it is always desirable to heat the air to as high a temperature as is practical in order to elevate flame burst temperatures to a maximum.

As high values of CO_2 are approached in combustion any lack of homogeneity of the air-fuel mixture becomes more apparent and should be corrected. In a well conceived combustion system, it is not difficult to maintain a CO_2 value of between 13 and 14 per cent.

Absorbing Surface

THE absorbing surface, on the fired side, is an item of great importance in all heating systems. Though the temperature of this surface influences radiant heat transfer but little, its temperature does greatly influence transfer by convection.

As a consequence, it is of advantage to lower absorbing sheet temperatures as much as possible if high convection transfer is to be had. Also, for the reason that velocity has a decided influence on convection transfer, the gases of combustion should be made to travel at high velocity over the absorbing surface.

The requisite velocity can easily be imparted by spinning the components of combustion. Another distinct advantage of rotating the gases of combustion in circular chambers over peripheral absorbing surface consists of utilizing centrifugal force to flow the hottest gases of lowest specific weight to the axis of rotation, thus maintaining a core of highest temperature to support combustion.

Spinning combustion within firing tubes gives rise to practically no heat insulation by deposition of finely divided solids. In the light of present knowledge, it is quite safe to assert that we are still far from having reached any insurmountable limitation in rates of heat absorption from combustion gases by clean metal sheets, or the transmission of heat through them.

Most of the serious difficulty of heat transmission seems to be on the side where the liquid fails to absorb the heat transmitted. Examining the principal causes of failure of heat absorption by liquids we find nothing that cannot be corrected. The entire transfer surface should be swept by a continuous sheet of liquid moving at high velocity in most complete and intimate contact with it.

This flood of liquid must be of sufficient quantity to furnish an adequate medium for absorbing all the heat transmitted. Immediately after contact with the heating sheet the liquid should be allowed to freely evaporate. Flow at high velocity assures perfect cleanliness on the liquid side of the sheet, guarantees lowest film temperature, and prevents the accumulation of silt, carbon or salt films having high heat insulating properties.

The heat absorbing capacity of vapors or of these vapors mixed with atomized liquid is many times lower than that of the liquid. From this fact it follows that a heating surface can only be sufficiently protected from failure by the sweep of liquid when this surface on the fire side, is directly exposed to absorption of radiant heat at high temperature levels and at high specific rates.

THE system of forced circulation fulfills all requirements of highest transfer rates. It makes every ton of metal in the heater do more work than it has done before. The degree of protection from failure provided for any heating surface is most definitely measurable in terms of the amount of energy efficiently expended in moving the liquid over that surface to conduct the heat away.

TULSA, March 1.—R. F. Garland, who had a half interest in the Wilcox discovery well at Seminole, has been elected head of the Operators Oil Co. succeeding Dr. Fred M. Boso, who sold his interests to Mr. Garland. The company which is capitalized at $525,000, operates properties in the Bowers pool in Gray county, Tex. and in Eddy county, N. M.

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Application of Power in the Operation Of Oil-Well Plunger Pumps

By Lester C. Uren
Professor of Petroleum Engineering, University of California

Article 1

PREVIOUS articles of the Uren series have discussed the principles of operation of the oil-well plunger pump, and have described in some detail the various types of plunger pumps and pumping accessories. This and the two succeeding articles will briefly describe the better known appliances that have been developed and used within recent years, in the application of power to pumping wells. The present article will be particularly concerned with methods of balancing the pumping load on the power equipment, and with long-stroke pumping devices.

PRIME movers used as a source of power in the operation of oil wells, include the steam engine, the gas engine, the oil engine or semi-Diesel engine, and the electric motor.

In many fields it is usual to place a separate prime mover at each well, in which case it is customary to operate the well "on the beam"; that is, the sucker rods are reciprocated by a walking beam which is oscillated by the usual pitman, crank and band-wheel combination, the latter being driven by a belt from the drive pulley of the prime mover.[1]

In the case of the electric motor, due to its high rate of rotation, an intermediate jack-shaft or reduction gear unit is generally employed. In the shallower fields in "settled" production, the multiple system of pumping, in which wells are operated from a central power plant by means of pull-lines actuating pumping jacks, is widely used and due to its economy of operation, is generally preferred to beam pumping when conditions permit of its efficient use.

Wells deeper than 3,500 feet however, must generally be operated with an individual motor or engine. In the present article, we shall be exclusively concerned with appliances used under conditions which require an individual engine or motor at each well.

Balancing the Power Load in Beam Pumping

EARLIER articles of this series have discussed the inequalities in loading that fall on the sucker rods during different parts of the pumping cycle, due to the great static weight of the rods and oil in the tubing, the dynamic stresses encountered in accelerating these dead loads, and elastic stresses set up in the rods.

These irregularities in loading impose a difficult operating problem on the prime mover, tending to cause irregularities in speed, and creating a variable and rapidly fluctuating power demand.

This irregularity in the power requirement can to a large extent be eliminated by applying a balance load on some part of the power transmission mechanism, which will store up kinetic energy on that part of the cycle when there is a surplus of energy available, to be later applied

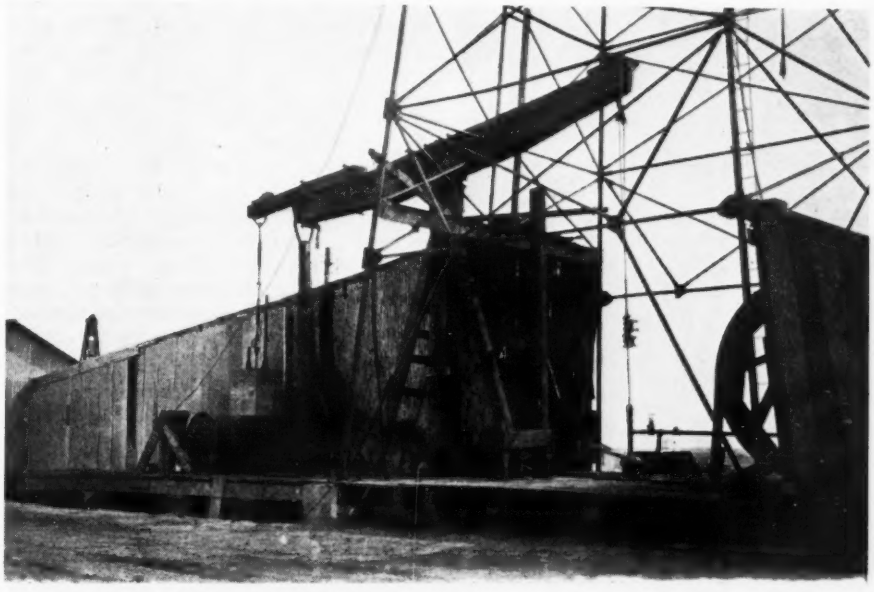


Fig. 1. Cantilever beam type counterbalance

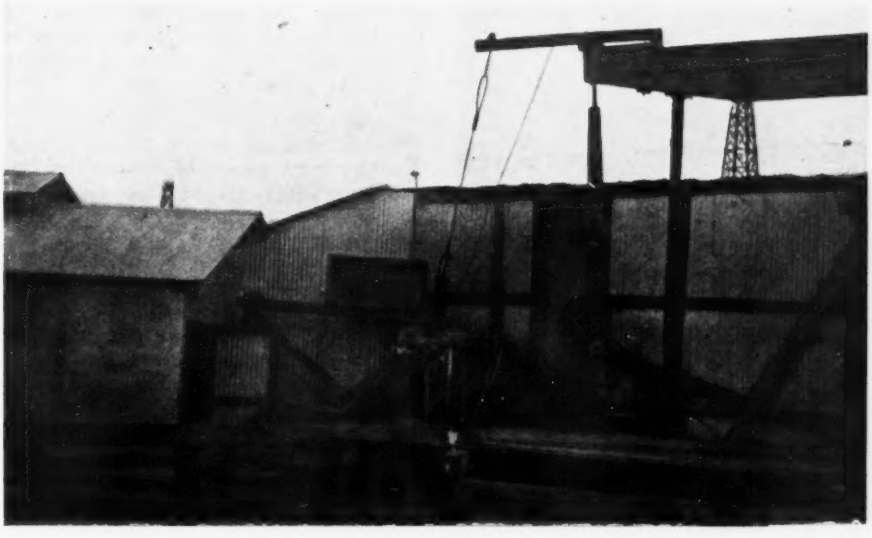
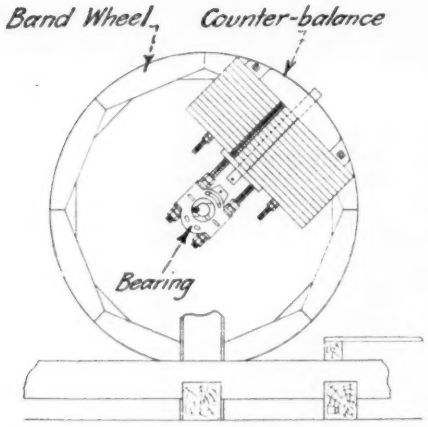


Fig. 2. Cantilever beam type counterbalance

[1] The usual power connections for pumping "on the beam", were illustrated in an earlier article of this series; see NATIONAL PETROLEUM NEWS, Oct. 26, 1927, p.69.



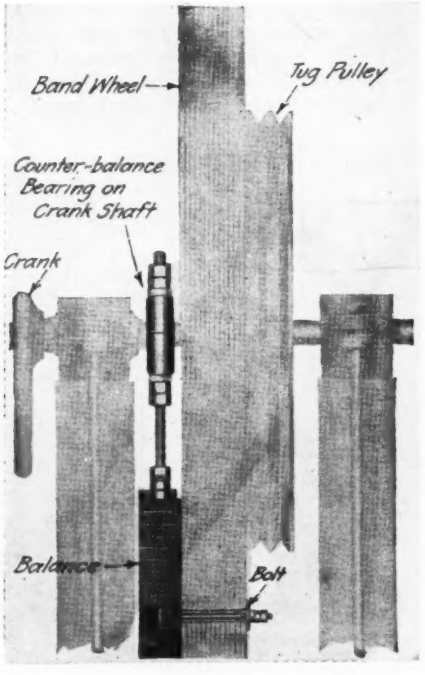


Fig. 3 Band-wheel type of counterbalance. (Oil Country Specialties Mfg. Co.)

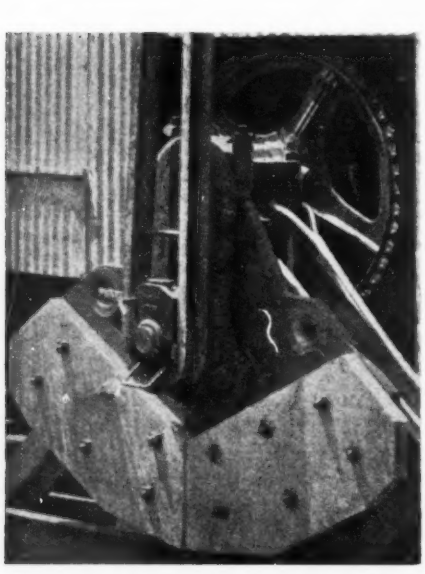


Fig. 4. Crank counterbalance. (International Derrick & Equipment Co.)

in relieving the load on the prime mover during other parts of the cycle.

The result is a rod motion which more nearly approximates the ideal, simple harmonic movement. Power is conserved, the overall power consumption being somewhat reduced: and elimination of sudden and extreme stress reversals in the rods materially increases their useful life.

It is believed also, that the smoother motion of the pump plunger reduces the tendency of the oil to emulsify if water is present.

Several different types of load-balancing devices have been developed and applied on various parts of the power transmission mechanism. Perhaps the simplest is that in which a weight is suspended from the pitman end of the walking beam.

Another widely used type of balance is attached to the band wheel. In another form, the balance is placed on the crank.

In still another type, the polish rod is partially supported near the lower end of its travel, by a pair of massive springs which are compressed during the down stroke, and by kinetic energy thus stored within them, assist in lifting the rods on the succeeding up-stroke.

Beam weights may be suspended either directly from the beam, between the pitman and Sampson post, or on a cantilever extension bolted on the pitman end of the beam. The photographs reproduced in Fig. 1 and 2 illustrate two different forms of cantilever beam balances.

The weight is preferably a rectangular block of concrete suspended on a steel rod or cable, though a timber box filled with scrap metal or boulders, is often used. To prevent the weight from swinging as the beam oscillates, it is preferably equipped with vertical guides on or between which it moves up and down.

Designs occasionally provide for adjusting the opposing forces operating on the beam, by shifting the point of support along the beam or cantilever extension. The work done by and on the balance of course, increases with the distance of the point of support from the beam center iron.

IT IS also necessary to provide a secondary means of supporting the counter-weight at such times as it may be necessary to disengage the pitman from the crank, as in pulling rods and tubing.

Robinson points out that the walking-beam type of balance is fundamentally incorrect in principle.[2] He argues that at the beginning of the up-stroke of the rods when the beam balance is at rest, the heaviest beam loads are encountered; and even though the balance weight is equivalent to a substantial part of the rod load, due to its inertia, it must be accelerated from rest before it is capable of yielding its stored energy.

Most of this energy is thus liberated after the rods have passed the mid-point of their up-stroke. This objection to the beam type of balance is probably valid when dealing with wells of shallow or moderate depth, but as has been explained in an earlier article of this series,[3] in deep-well pumping, due to the elastic properties of the long column of rods, the maximum rod stress frequently comes at the upper end of the stroke.

In this case, the beam type of balance is not necessarily inefficient due to its inopportune time of application. As Mr. Robinson contends however, there is no doubt but that energy is consumed in accelerating the mass of the counter-balance from the rest at each end of the stroke.

Studies by Clapp[4] have indicated that 27 per cent of the total energy consumption is expended in overcoming the inertia of the static loads.

ANY disadvantage that the beam type of balance may possess, due to its inertia, is avoided in the band-wheel and crank types of balances.

Such balances revolve with the crank shaft at an approximately constant angular velocity, and develop to a certain degree the familiar fly-wheel effect which tends to carry the mech-

2 Robinson, R. R., "Individual Pumping Units, their Development and Advantages in Use", Oil Field Engineering, Feb., 1928, pp.29-33.

3 See NATIONAL PETROLEUM NEWS, issue of Oct. 26, 1927.

4 Clapp, W. H., "An Analysis of Deep-Well Oil Pumping," Mechanical Engineering (Am. Soc. Mech. Engrs.) Sept., 1926, Vol. 48, pp.941-946.

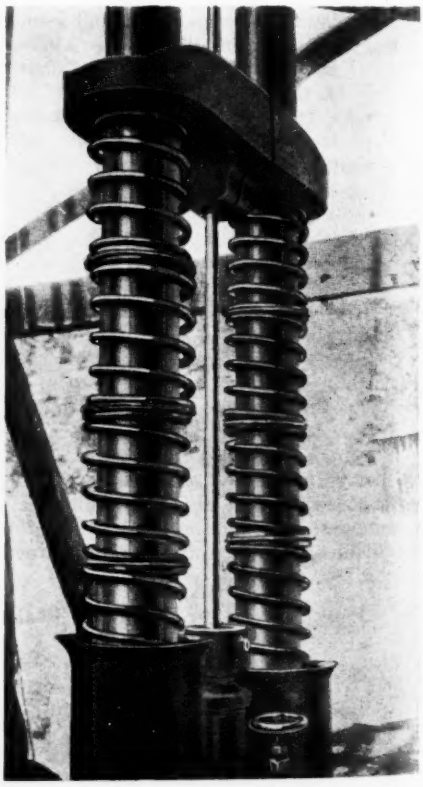


Fig. 5. Spring type of counterbalance. (After B. H. Scott in "Oil Field Engineering")

anism over the position of peak load, wherever it may be, with minimum loss of velocity. Due to the comparatively slow rate of rotation of the band wheel however, the kinetic energy developed by rotating balances probably has less influence than the static force due to the attraction of gravity on their mass.

This, of course, develops a maximum turning moment when its center of gravity is 90 degrees past the vertical axis through the center of rotation. It is therefore important that the balance be attached to the wheel at such a position with respect to that of the crank, that it will exert its maximum force at the proper part of the pumping cycle.

A well-known type of band-wheel balance is illustrated in Fig. 3. As indicated in the illustration, it is keyed to the crank-shaft and bolted to the side of the band wheel near its circumference.

It may be attached to the wheel at whatever angular position with respect to the crank, gives the best balancing effect, and the mass used may be either increased or decreased within certain limits, by adding or subtracting metal weights, which are provided in units of 100 or 150 pounds.

Removal of the counter-balance, which is necessary when pulling rods or tubing, can be accomplished in five minutes.

A recently developed type of crank counter-balance is illustrated in Fig. 4.

This counter-balance is supported on a special hub cast on the crank, in such a way that it may rotate on the hub when not needed; or, on inserting a bolt, the balance may be rigidly attached to the crank, and revolves with it. The bolt may be inserted in either of four holes in the counter-balance, so that it may be adjusted to as many peripheral positions, with respect to the crank, to compensate for variation in the length of stroke.

ADDITIONAL adjustment is provided by a series of weights which are easily added to or removed from the main balance casting. By these adjustment features, the operator can not only vary the intensity of the counter-balancing effect, but he can also vary the point in the stroke at which the counter-balance exerts its maximum influence.

The spring type of counter-balance applied directly to the polish rod, in so far as the writer is aware, has been used only to a limited extent, but it would appear to have certain advantages.

An installation of this type, illustrated in Fig. 5, has been described by Scott.[5] It consists of a pair of powerful coiled springs mounted in a vertical position on opposite sides of the tubing head, which support a cross-head rigidly attached to the polish rod.

The springs are coiled about two vertical cylindrical guides, partially enclosed in outer concentric tubes filled with crude oil. An adjustment at the lower end of the springs permits of regulating the compression under which they operate.

As the polish rod descends, the springs are compressed, thus storing up energy which is released when they again expand during the succeeding up-stroke. Mr. Scott, who has investigated several of these so-called "stabilizer" installations in the field, reports that by their use, 50 per cent of the operating power is conserved and that a smoother rod motion is secured with less of the destructive jar that characterizes the unbalanced condition.

A principle somewhat similar to that on which the spring balance is based, is employed in what is called the air-balanced jack.[6]

In this case, instead of using springs to modify the characteristics of the rod motion and absorb some of their kinetic energy, a pair of air-cushioned pistons is employed as illustrated in Fig. 6. The air cylinders, A, are placed below the derrick floor, on opposite sides of the casing head, and a cross-head, B, connecting the piston rods, supports the polish rod, C. A

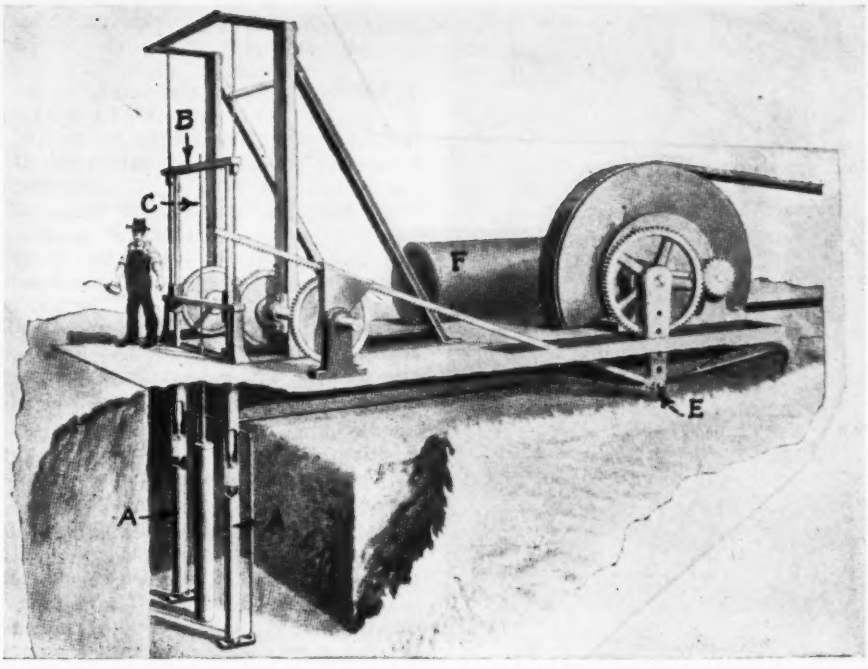
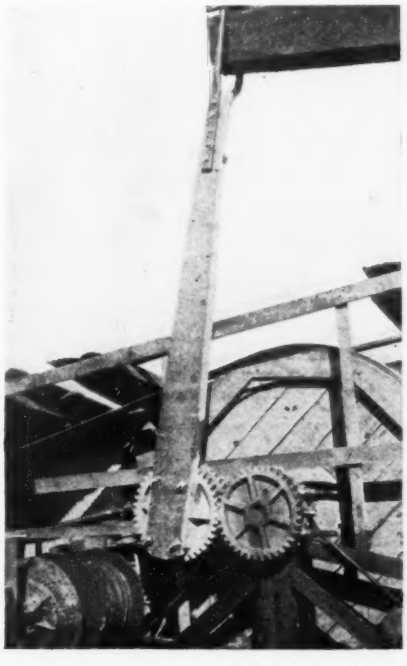


Fig. 6. Air balanced pumping jack. (S. C. Carter Co. in "Oil Field Engineering")



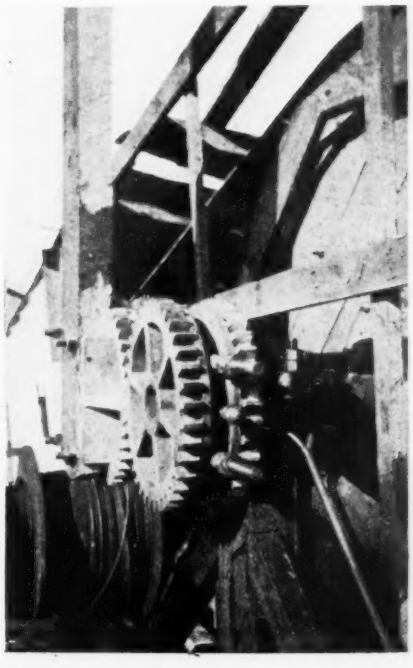


Fig. 7. Fetty long stroke pumping attachment

5 Scott, B. H., "A Study of Various Problems Encountered in Production Operations," Oil Field Engineering, Oct., 1927, pp. 61-64.

6 Described in Oil Field Engineering, issue of Nov., 1927, p. 63.

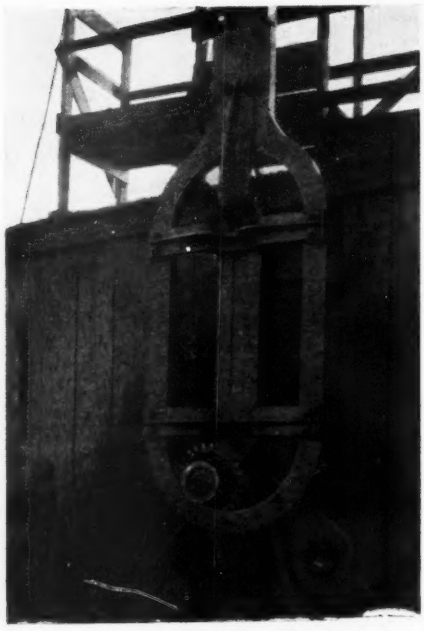


Fig. 8. Reschke long stroke pumping attachment

long stroke is provided by a system of gearing driven by a toothed rack mounted on a straight, rigid member actuated by a large crank, E, on the band-wheel shaft.

A small motor-driven compressor, automatically controlled, with an intermediate compressed-air receiver, F, maintains air pressure beneath the pistons, compensating for air leakage. This apparatus is at present only emerging from the experimental stages of development, and within the knowledge of the writer, has not as yet found extensive field application.

Willrich has published the results of a series of tests with different types of counter-balances, in which the Axelson recording dynamometer (to be described in a later article of this series) was used to determine the rod stresses at different parts of the pumping cycle.[7]

FROM the data assembled, he concludes that smooth band-wheel motion does not necessarily mean minimum rod stresses, but that normally the reverse is true.

He finds that a cantilever beam balance is more effective in reducing rod stresses than either the intermediate beam weight or the band-wheel balance when the latter is placed in line with the crank. When the band-wheel balance was placed 270 degrees in advance of the crank, it was found that minimum rod stress resulted, but with the balance in this position, the band-wheel velocity was too erratic for routine operating conditions.

It is pointed out however, that this varies with the depth of the well, the length of stroke and the number of strokes per minute. The data indicate that though the engine load is reduced somewhat, the primary effect of counter-balancing is to accomplish a change in distribution of the load.

In certain tests on a 3,600 foot well, electrically operated, Anderson[8] reports a power saving of but little more than 8 per cent through the use of counter-balances. The band-wheel balances were in this case found to be slightly more effective than the beam balances.

Long-Stroke Pumping Devices

IN AN earlier article of this series, it was pointed out that a long and relatively slow stroke for the pump

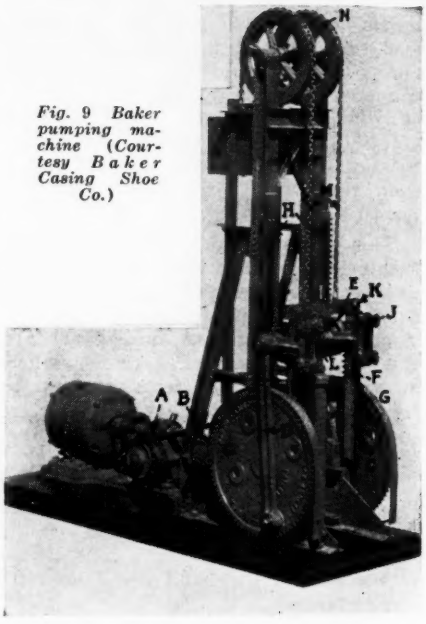


Fig. 9 Baker pumping machine (Courtesy Baker Casing Shoe Co.)

plunger had many advantages.[9] A long stroke permits of better valve action, more complete filling of the working barrel on the up-stroke of the plunger, less difficulty from gas in the working barrel, and a lower percentage loss of the effective stroke due to elastic stretch of the rods.

A long, slow stroke gives the requisite plunger travel with fewer stress reversals in the rods, and therefore leads to longer life for the rods and fewer interruptions in service due to rod breakage.

The typical band wheel - crank - pitman - walking beam assembly, with a 4-inch spacing between the wrist-pin holes in the crank, provides for five different lengths of stroke ranging from 24-inch to 56-inch. Ordinarily,

7 Willrich, E. G., "Mechanics in Pumping of Oil Wells", Oil and Gas Journal, Jan. 13, 1927, p.76.

8 Anderson, H. H., "Application of Electric Motors to Oil-Well Drilling and Production Practice", Oil Field Engineering, Oct., 1927, pp. 35-46.

9 See NATIONAL PETROLEUM NEWS, issues of Nov. 9, and Oct. 26, 1927, page 75.

Fig. 10. "Wig-Wag" long stroke pumping device. (After E. H. Musser). At left: counterbalance. At center: connections at crank, showing rocker-multiplier. At right: showing connections to polish rod

pumping operations are conducted with the wrist pin in the second or third hole, giving a beam motion of 32 inches or 40 inches respectively.

This is sufficient for wells of moderate depth, but for deep wells where the rod stretch may become a factor of greater importance, recourse must be had to longer strokes of 48 inches or 56 inches. As the length of stroke increases, the eccentric thrust due to angularity of the pitman increases, and the mechanism becomes less efficient. The load is more difficult to balance effectively and a jerky motion results.

The recognized advantages of a long pumping stroke, and the limitations of the ordinary band wheel-crank mechanism in securing an efficient long-stroke movement for the rods, have led during recent years, to the development of a variety of new devices for this purpose.

Some of these are designed primarily as additions to the commonly used equipment; but in other cases, entirely different mechanisms designed to supplant the ordinary equipment, have been developed. About 30 different long-stroke devices are now on the market, designed for rod strokes ranging from six to 20 feet.[8]

We have space for brief descriptions of only a few of the more important of these.

THE Fetty long-stroke pumping attachment consists of two pair of gear wheels, one pair fastened rigidly to the pitman and the other keyed to the band-wheel shaft in the position usually occupied by the crank. Two connecting rods attached to bearings, one on each of the two shafts on which each pair of gears is mounted, hold the gear wheels in mesh.

The two photographs reproduced in Fig. 7 will serve to illustrate the arrangement. As the band wheel shaft rotates, the gear wheels mounted on the pitman revolve around the circumference of the pair mounted on the band-wheel shaft, thus providing a stroke for the beam equivalent to 3 times the diameter of the interlocking gears.

The Fetty attachment is ordinarily designed for a five-foot stroke, and it is claimed that its use leads to the production of a greater volume of fluid with less power, and that a more uniform beam motion leads to less rod trouble. The cost of the attachment is said to be about $1,000.

The Reschke long-stroke pumping device also makes use of gear wheel which is bolted to the crank or keyed to the band-wheel shaft in place of the crank.

An elliptically-shaped steel guide equipped with toothed racks (see Fig. 8) around which the gear wheel travels, is attached to the lower end of the pitman, which must be somewhat shorter than usual. A special "mule-head" is attached to the rod end of the beam, providing a vertical pull on the polish rod, which is suspended on steel cable.

THIS pumper provides a 72-inch stroke and is said to result in a smoother motion than an ordinary crank, particularly at the stroke reversals. "Whipping" of the rods, with consequent abnormal fatigue of the rod metal, is greatly reduced. The point of application of power to the pitman is never more than 8 inches from the axis of the crank, hence the angular thrust is greatly reduced and power is conserved.

The device may be disconnected for pulling operations in 30 minutes.

The Baker pumping machine, a model of which is illustrated in Fig. 9, is designed to completely replace the walking-beam and pitman mechanism. The machine, which is about 15½-feet high, is mounted on the derrick floor over the well.

Power is transmitted from a sprocket placed on the crank-shaft, A, by a chain drive, to a second sprocket mounted on a horizontal shaft, on each end of which small gears, B, are mounted. These gears engage a pair of large gears, C, 5-feet in diameter. In these large gears are four holes set at varying distances from their center of rotation.

The connecting rods, D, are attached to wrist pins which may be placed in either one of these four holes. The upper ends of the two connecting rods are fastened to a cross-head on which are placed two small gears, E, one at each end of the cross-head, just inside the connecting rods. These gears operate between stationary vertical racks, H, fastened to the upright supports, I, and movable racks, F, attached to a frame, G, sliding on fixed vertical guides, J.

This frame is equipped with a cross-head, K, which supports the upper end of the polish rod, L. Two chains, M, attached to the movable frame, pass up over a pair of sheaves, N, and thence down to a counter-weight, O. The machine provides a rod stroke of 5, 6, 7 or 8 feet. The speed may be varied between 10 and 20 strokes per minute.

The Baker machine has been used to a limited extent in pumping some of the deep wells of the Los Angeles

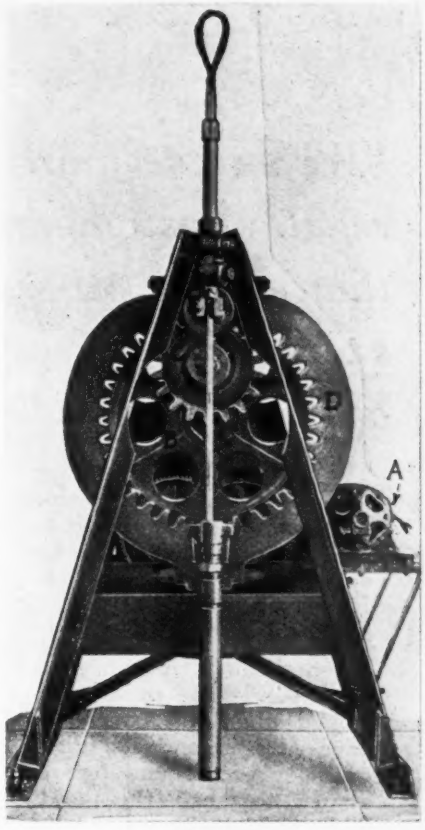
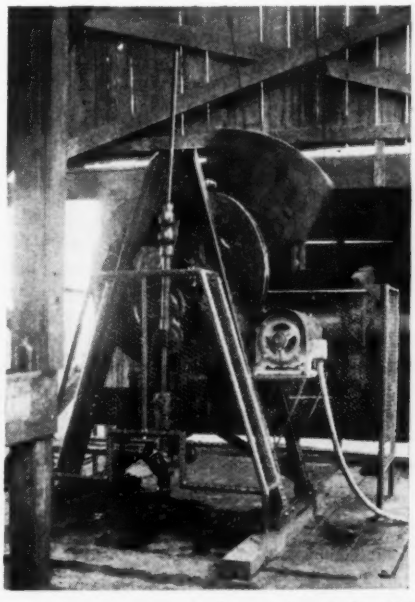


Fig. 11. "Simplex" pumping jack. (D. & B. Pump & Supply Co.)



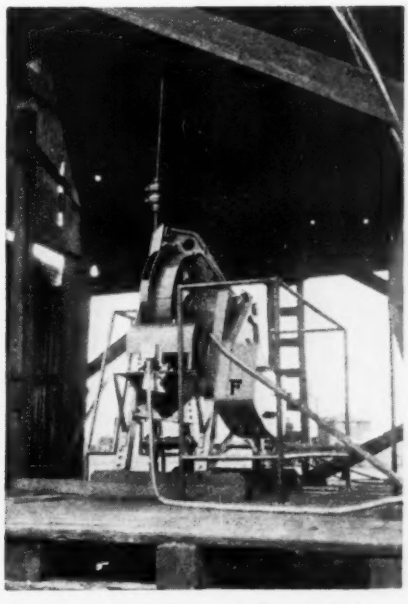


Fig. 12. "Simplex" pumping jack. (Photos courtesy D. & B. Pump & Supply Co.)

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Fig. 13. Hydraulic long stroke pump. (Photo reproduced by courtesy of Pacific Oil Tool Co.)

Basin, California.[10] Its cost is said to be about $3750.

Mr. Musser, from whose paper the above description of the Baker pumping machine has been adapted, also describes a long-stroke pumping device which he calls a "wig-wag" pump.

The illustrations of Fig. 10, made available through his courtesy, illustrate the device as applied on a well in the Santa Fe Springs field, California. The photograph at the right shows a vertical steel frame supporting a sprocket wheel.

A CHAIN passing over this sprocket is attached to the polish rod. The other end of this chain is attached to the upper end of a timber "rocker" mounted in a vertical position near the crankshaft, and pivoted at its lower end (see center photo). A similar chain connected with the top of the rocker, supports at its other end, a heavy balance weight (shown in the left-hand photograph).

The crank is connected with the center point of the rocker by a short steel pitman, as shown in the central photograph. With the wrist-pin in the third hole of the crank, the device applies a six-foot stroke. A speed of 12 strokes per minute is used, though this could be increased somewhat if necessary.

The device is said to have proven satisfactory in service, giving a smooth motion which has materially reduced rod troubles.

A long-stroke pumping unit designed to completely supplant the usual band wheel - crank - walking beam mechanism, known as the "Simplex Jack", has recently been developed by the D & B Pump and Supply Co. The jack is illustrated in the catalog cut reproduced in Fig. 11, and in the photographs of Fig. 12.

It may be driven by a chain drive from a gas engine, or by a geared connection with an electric motor. With reference to Fig. 11, motor A drives gear wheel B, on the side of which gear wheel C is eccentrically mounted. As gear C rotates with B, its teeth mesh in a stationary circular rack, D. Polish rod support, E, is eccentrically attached to the side of gear C.

As B revolves clock-wise, C, the

10 Musser, E. H., "Improved Pumping Equipment for Oil Wells; Part I, Long-Stroke Equipment", Summary of Operations, California Oil Fields, May, 1926, Vol. 11, No. 11. (Published by Dept. Oil & Gas, Cal. State Mining Bureau).

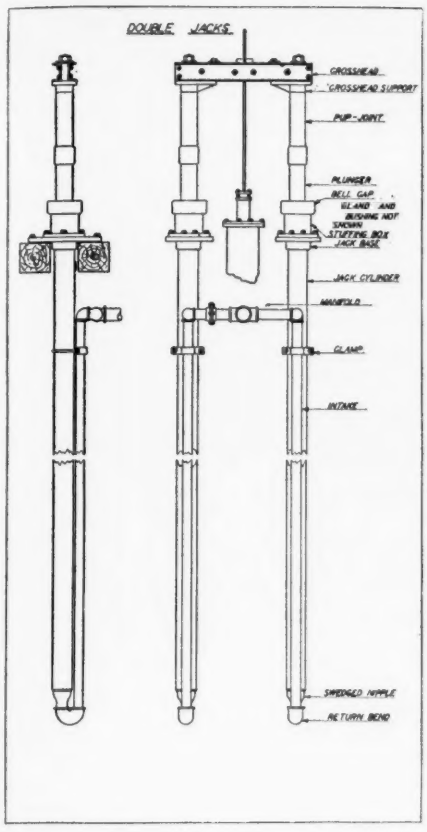

Fig. **14.** *Drawing illustrating construction of and connections for hydraulic long stroke pump. (Pacific Oil Tool Co.)*

teeth of which are meshed in stationary rack, D, revolves counter-clock-wise. The eccentric motion of C, to which the polish rod is attached by a pivoted connection, imparts to the latter a vertical movement.

A counter-balance shown at F in Fig. 12, provides a fly-wheel effect which aids in securing a smooth rod motion which is said to closely approximate simple harmonic motion. The machine is supported on a steel frame which can be bolted to the derrick floor.

WHEN pulling operations are necessary, the machine may be readily disengaged and moved aside. A separate mechanism must be employed for pulling purposes. The machine is made in two sizes, the "standard" which provides a stroke of about 6 feet, and the "junior", which has a 3-foot stroke.

In addition to a smooth straight-line rod motion, the manufacturers claim that it operates with less power than the ordinary beam mechanism, with fewer pulling jobs and increased volume of fluid pumped.

A long-stroke pumping device that has of late enjoyed considerable popularity in certain fields where difficult pumping conditions are presented, is one which lifts the column of sucker rods by hydraulic force, utilizing the hydraulic lift principle. This device completely eliminates the crank, pitman and walking beam.

The photograph reproduced in Fig. 13 illustrates the equipment employed. Two hydraulic jacks, A, designed for a stroke of 10 or 11 feet, are mounted on the derrick sills in a vertical position, on opposite sides of the casing head. The jack cylinders extend 21 feet beneath the derrick floor into holes which must be especially excavated for the purpose, as illustrated in Fig. 14.

A steel cross-head, B, connects the two jack plungers at their upper ends and grips the polish rod, C.

High pressure pipes connect the jack cylinders with a powerful hydraulic ram or pump, D, which is operated by a chain and sprocket drive from a counter-shaft driven from the band-wheel sprocket, used normally in driving the calf wheel.

The ram is equipped with a plunger driven by a cross-head E. Moving in one direction, this piston applies water-pressure to the jacks to accomplish the up-stroke of the rods, while on its return stroke it applies hydraulic pressure to a cylindrical counter-balance pressure tank, F, containing imprisoned air under pressure.

The air thus compressed in the pressure tank on the down stroke of the rods, assist in lifting the rods during its expansion on the succeeding up-stroke.

The pressure tank is designed to counter-balance the weight of the rods and about 40 per cent or more of the fluid in the tubing. Approximately the same amount of work is done on each stroke of the pump piston, thus giving a fairly constant power load. The equipment is of massive construction, weighing about 14,000 pounds. The cost is about $4,000.

A modified form of hydraulic unit using a single jack, is also available at slightly greater cost ($4,300). This type, however, is somewhat less expensive to install due to the fact that it is entirely above the derrick sills and no excavations are necessary.

This device is capable of developing a rod stroke of either 10 or 11 feet, as desired, and as many as 20 strokes per minute, thus providing a theoretical plunger travel of as much as 220 feet per minute. The high rate of plunger travel and material reduction in the number of stress reversals in the rods, ensures high fluid capacity with a minimum of rod troubles due to fatigue of the metal.

The hydraulic pumping device provides the same plunger travel as an ordinary beam-actuated pump, with about one-third the number of strokes.

About 100 installations have been made in the Los Angeles Basin fields, where unusually difficult pumping conditions are frequently presented, and many remarkable results have been attained.

In one well pumped from a fluid level 3,800 feet below the surface 850 barrels of fluid per day were pumped through 2½-inch tubing, using 16 nine-foot strokes per minute. In another instance, 650 barrels of oil per day of 35 gravity, were pumped through 2½-inch tubing from a well

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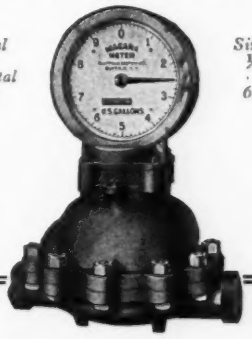

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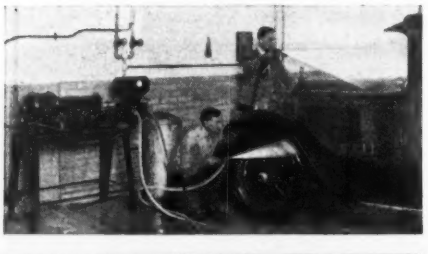

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in which the fluid level was 4,000 feet beneath the delivery point.

Twelve hundred barrels of fluid per day have been pumped through 3-inch tubing from a depth of 2,000 feet. Due to the ability to carry low fluid levels and handle large volumes of fluid with this device, the productivity of wells is often greatly increased.

At the same time, expense due to rod difficulties is said to be much reduced. It is claimed by the manufacturers that in many cases the unit cost of long-stroke pumping is cheaper than is possible with the gas lift, especially where fluid levels are too low for ample "submergence".

Another device in which hydraulic pressure is used in actuating the sucker rods, instead of a walking beam, is the Hubbard Oil Head,[11] which is illustrated diagrammatically in Fig. 15.

THIS pumping unit consists of a pair of tandem-connected pistons. A and B, operating in separate cylinders are mounted in a vertical position over the well. Hydraulic pressure applied below the lower piston, A, with the aid of pump C serves to accomplish the up-stroke of the rods.

During the down-stroke water is forced by piston B into pressure tank D, compressing imprisoned air with which it is partly filled. This compressed air checks the downward descent of the rods and assists in lifting the rods and fluid in the tubing during the succeeding up-stroke. A three-way valve, E, automatically controlled by the movement of the oil-head pistons, serves to alternately connect the pump discharge and suction with the pressure cylinder, A. A pressure chamber and accumulating tank, F, on the discharge line from the pump, containing imprisoned air, serves to equalize inequalities in the pressure piping and stores fluid discharged by the pump while the rods are descending; while a low-pressure receiving chamber, G, serves a similar purpose on the pump suction line. A ten-foot plunger stroke is provided by the oil head. The device also permits of considerable adjustment in the relative speeds with which the up and down strokes are accomplished.

11 "Hubbard Oil Head Method of Pumping Deep Wells", Oil Field Engineering, May, 1927, pp.57-63.

Summary and Conclusions

THIS article, the first of a series of three reviewing recent advances in the art of applying power to the operation of plunger pumps in oil-well service, presents brief descriptions of a variety of different appliances and devices useful in balancing the loads on the power transmission mechanism, and in securing a longer stroke of more uniform velocity than is possible with the usual band-wheel, crank, pitman and walking beam.

Analysis of the results secured by the use of these devices indicates that they afford a means of reducing power consumption and of diminishing rod difficulties. By maintaining wells in operation for a greater percentage of the total time, and by permitting the lifting of fluids at a higher daily rate, the use of such appliances results in a more rapid rate of oil recovery, and probably also, in a greater ultimate recovery than is possible by ordinary pumping equipment.

The next article of this series will discuss the relative advantages of different types of prime movers in oil well pumping service, and will describe additional devices, recently developed, that are useful in securing greater efficiency in power application.

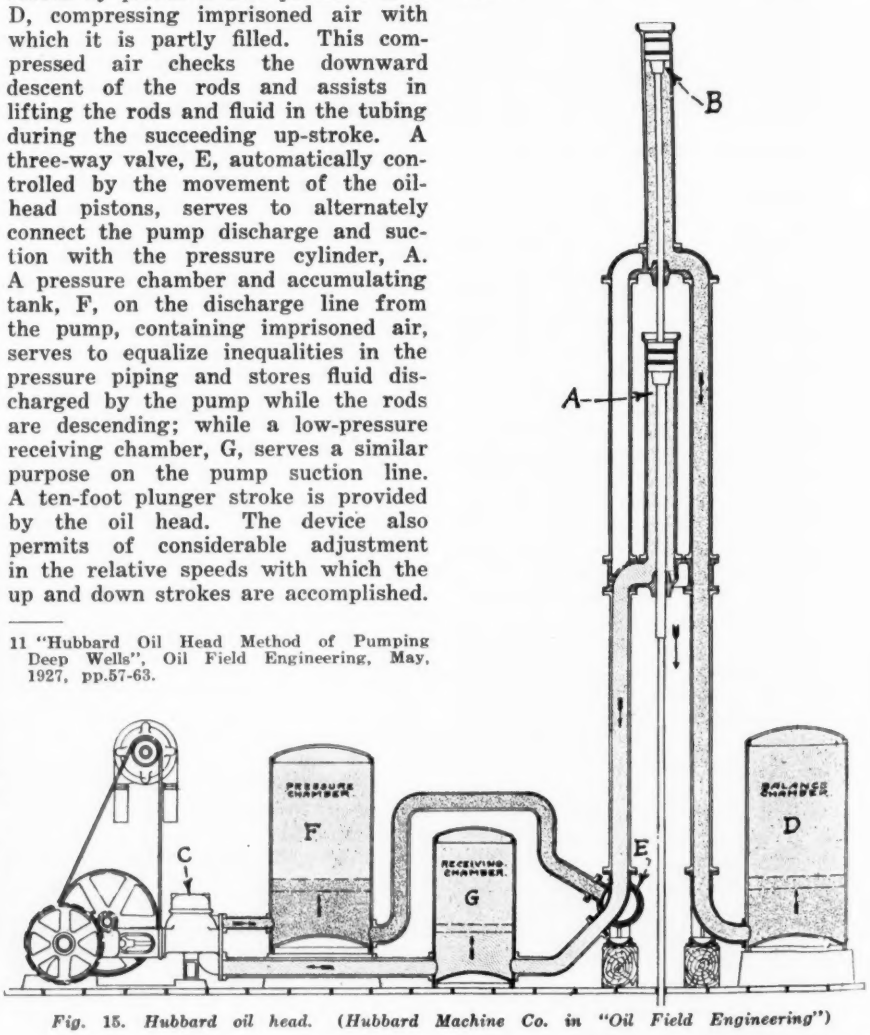


Fig. 15. Hubbard oil head. (Hubbard Machine Co. in "Oil Field Engineering")

Dublin, New Mexico, informs the traveler of its existence

Solitude of Texas Wastes Awakens To the Chug of the Drill

By Paul Wagner
N. P. N. STAFF WRITER

THIS is the fifth and concluding article in the series written by Mr. Wagner, production analyst for NATIONAL PETROLEUM NEWS, *based on his recent motor trip through West Texas. These articles started in the Feb. 8th issue.*

IF THE impression of flitting curiously from the serious to the gay results from a perusal of these observations on a motor trip "Detouring West Texas" it should be recalled the writer passed through that kind of a country.

In Winkler county, where the last episode left my traveling companion and myself, we had progressed westerly and northerly out of the eastern part of the Permian age salt basin region, with its grazing lands and some agriculture, through the relatively barren wastes of Crane, Ector and Ward counties.

Along that route one could but marvel at the change brought by the never-ending search for petroleum. Here and there were found settlements that gave incontrovertible evidence of the change from miles of unbroken solitude in the waste lands to an era of industrial activity.

If the visitor to the region is disappointed in finding orderly growth and development in contrast with the hectic operations of a Burkburnett, Smackover or a Seminole, he should recall the oft-repeated statement that all things are relative.

The Smackover and Seminole districts are confined to producing areas within the boundaries of four townships square. The Permian salt basin is a region comprising thousands of square miles, in which many undiscovered fields may be found.

Total salt basin oil production to Jan. 1, 1928, had been roundly 75,000,000 barrels from less than a dozen fields since the Big Lake discovery, in Reagan county, in May, 1923. Of that total the Big Lake and University-McElroy areas of Reagan and Crane counties, respectively, had yielded more than 55,000,000 barrels. The McCamey district of Crane-Upton counties had given up some 8,400,000 barrels; the Yates field of Pecos county about 5,000,000 barrels and the Hendricks field of Winkler county around 2,500,000 barrels.

The development mentioned, plus nearly a half dozen one-well discovery areas scattered through the salt basin region, stimulated wildcatting into the far reaches of dune-covered surfaces and arid lands of west Texas.

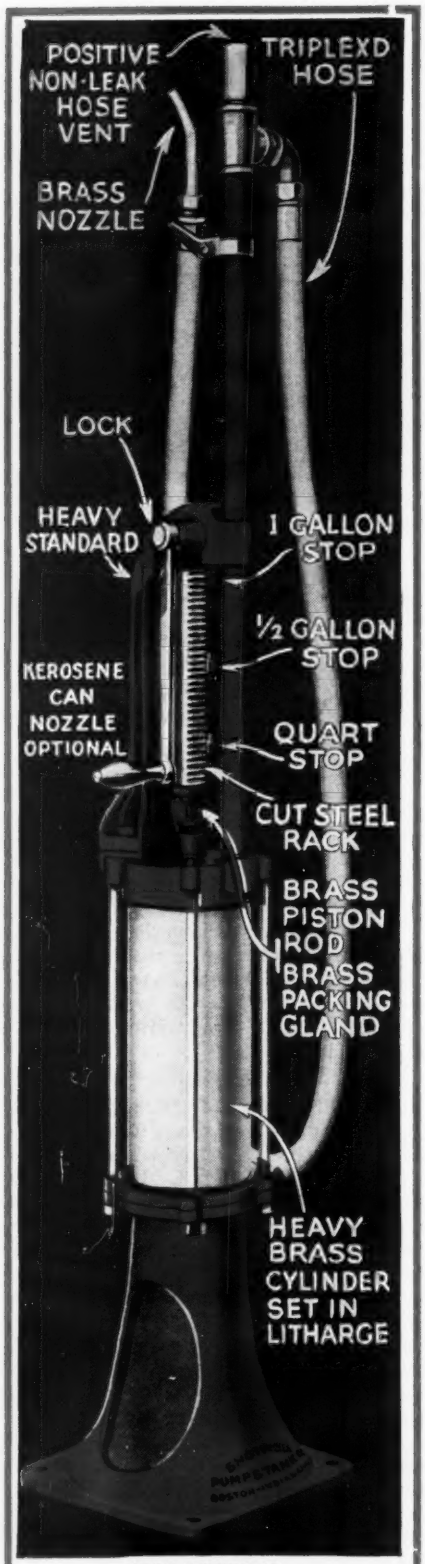
DRIVING through the territory one may view spotted against the horizon, miles away, a lone wildcat that gives only partial evidence of the leasehold costs and transportation problems that made it possible. Though far removed from each other in a field sense, such wildcat tests fairly dot a region where the comparatively level ground and the clear atmosphere permit vision for miles in any direction.

Two kinds of serious industrial effort are found in the region. One has to do with development; the other with exploration. It is with the last mentioned that the writer purposes to deal here.

NORTH from the Crane county development in the University-McElroy area past the two small wells of The Texas Co., and J. S. Cosden, in Ector county, leasing has progressed northerly into Andrews and Gaines counties. Beyond the Hendricks field, in Winkler county, the "play" passes into New Mexico past the Scarbauer (sometimes called Scarborough) discovery of the Llano Oil Co., which was drilled on a block in which Roxana Petroleum Corp. afterwards bought an operating half interest.

It was into this last mentioned area of increasingly barren aspect that our route led from Kermit, Winkler county, after our visit to the Hendricks field. We passed through the Llano-Roxana block to the west of the Scarbauer well, in sec. 1, block C-22, public school lands, which produces an average of about 20 barrels a day after shooting with nitroglycerin in the lime pay formation at total depth of 3295 feet.

A second test is drilling adjacent to the Scarbauer discovery, as it is believed the well marks the existence of another sub-surface "high" in Winkler county, about 12 miles north of the Hendricks field. This suggestion is brought out more forcefully



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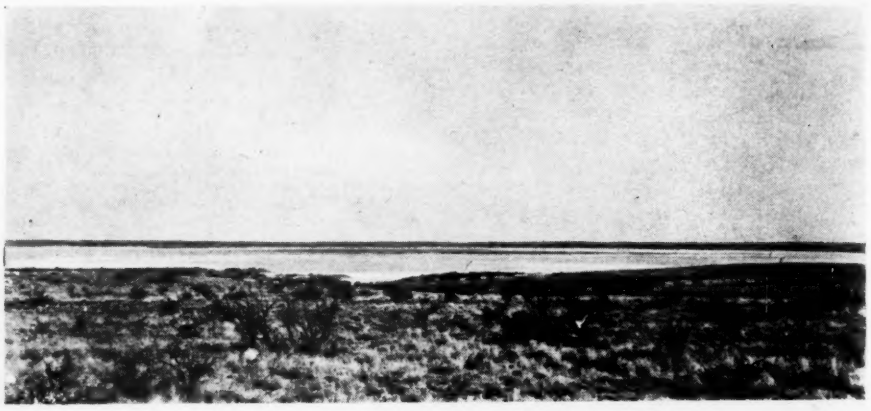


Shafter's Lake, an island sea of salt water amid the wastes of Andrews County, Texas

by the performance of The Texas Production Co.'s No. 1 Rhodes, about seven miles north of the Scarbauer, in the extreme southeast corner of Lea county, New Mexico. The Rhodes well, which we visited, was drilled to 3213 feet, yielding 23,000,000 cubic feet of gas, 110 barrels of oil daily, and producing from a sand horizon found just above the big lime of the region.

It is such outposts as these, plus vague evidences sometimes found in a region where geology is generally lacking at the surface, that encourage explorations into territories that can be described only as the vast unknown.

THE most fitting description for the whole territory lying in and around the southeast corner of New Mexico was voiced by my companion when he suggested that I obtain a full list of synonyms for "utter and complete vacuity" before attempting an accurate word picture of this vast domain.

We followed two ruts in the sand, mile on mile, from Kermit to the village of Jal, New Mexico, making a side trip en route to what certain and sundry signs informed us was Dublin, N. M. In justice, let it be said there was a branding corral and townsite office at Dublin, a few miles northwest of the Rhodes well.

At Jal, we found more good food in a wood and sheet iron cafe "proprietored" by an itinerant restaurant keeper who boasted 42 years experience on the frontier. Thence, we traveled 90 miles to Carlsbad, N. M., the mecca for many a travel-worn son of the desert, where a bath in a porcelain tub greatly revived our lagging spirits.

The luxuries of civilization were ours but for a night. At dawn we turned our faces east and grimly faced another day across the interminable waste lands that depress the spirit and cause one to ponder on the futility of human existence.

Our only relief was when we stopped at the various towns en route. There we were generally welcomed by the entire population, both of them. As each town hove into sight my companion sang in most moving manner the following ditty:

"My home town is a one horse town,
  But it's big enough for me,
The population is very, very small,
  You couldn't find it on any map at all."

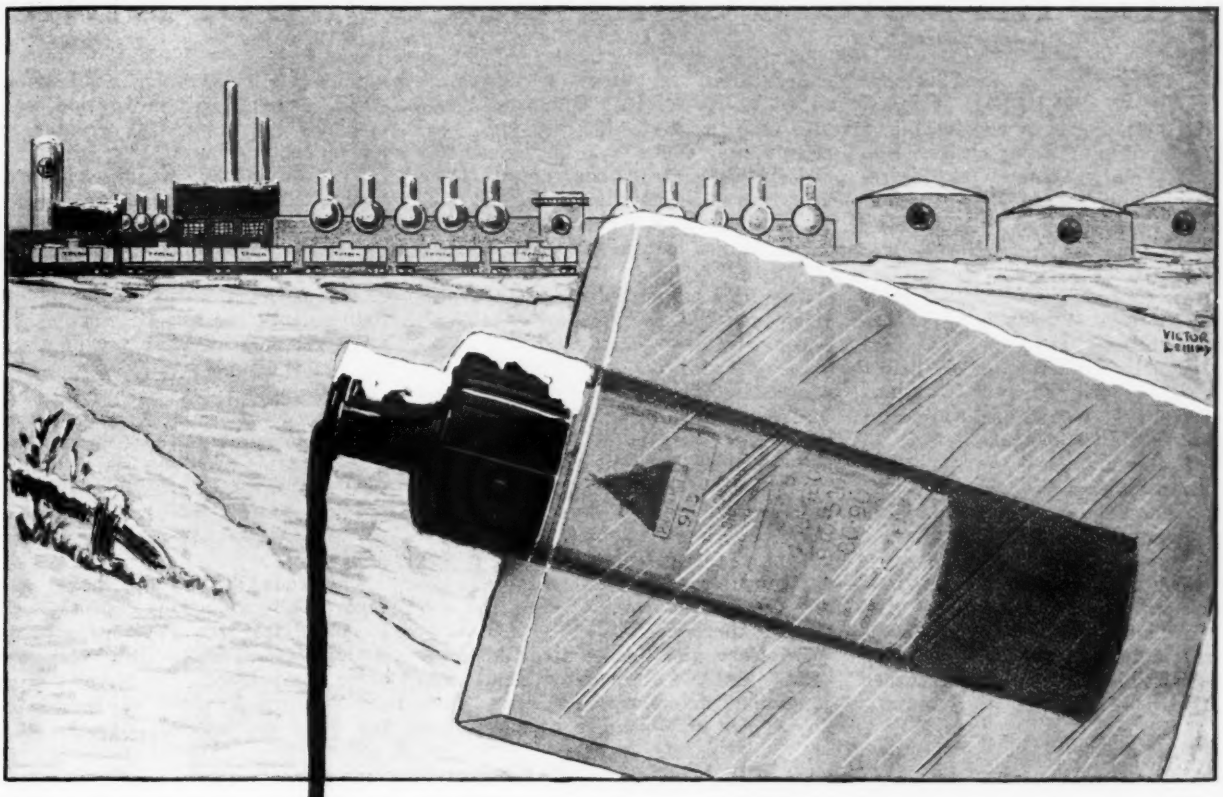
That day's journey took us entirely across Lea county, New Mexico, and Andrews county, Texas. Irregular sand dune topography with small relief is common to most of this region. Even the western rim of the Llana Estacado, or staked plains, lacks its commanding physiography in the area; being covered with windblown sand which ranges in thickness from a few feet to more than 200 feet. Near Monument, in Lea county, the Llano Estacado is marked by the extension northwesterly toward Lovington, N. M., of the Mescalero ridge.

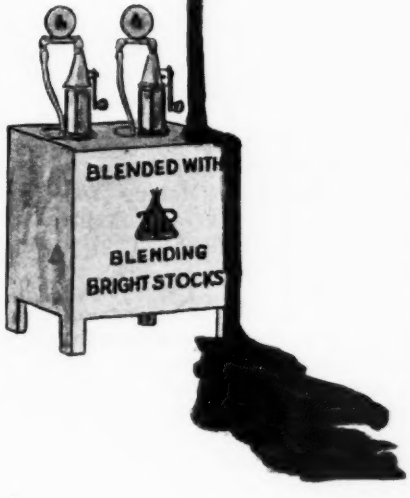
Traveling across Andrews county, Texas, from Monument, the trail passes, or goes through, shallow draws draining in a general southeasterly direction. Circular or elongated depressions may be noted, many of them containing the salt playas common to the plains of western Kansas, Oklahoma and Texas.

A sight of unusual interest in Andrews county is Shafter's Lake, an inland salt water sea of considerable size, which is the only occurrence of similar magnitude in the southwest.

OUR pioneering ended at Midland, where we turned eastward on a 340-mile drive to Forth Worth, through an area where friendlier soil and more favorable climate had produced conditions of greater prosperity, plus more populous communities.

Midland, it should be recorded, bears similar relation to the northern part of the Permian basin oil region that San Angelo does in the south. It is a smaller city by many thousands of inhabitants, but it is a district headquarters base for the oil country that is destined to grow in importance, both as regards administration and operating affairs of the industry.





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Low Cold Test Blending Bright stocks are getting these results for a rapidly growing list of prominent Jobbers and Blenders.

These products are from our own supply of 100% Pure Ranger Paraffin Crude—*run direct from the stills and contain all the hydrocarbons in an uninterrupted chain.* They are contact filtered and Super-Centrifuge de Waxed.

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Gravity	23-25	Gravity	23-25
Flash	450-460	Flash	490-500
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Cold Test	10-20	Cold Test	10-20
Color	6-7 N P A	Color	7-7½ N P A
Carbon Res.	Under 1.5%	Carbon Res.	Under 1.5%

TEXAS PACIFIC COAL AND OIL COMPANY

FORT WORTH, TEXAS

Ohio Marketers Consider Code of Ethics

Staff Special

CLEVELAND, March 2

OHIO oil men are considering a code of marketing ethics. District clubs of the Ohio Petroleum Marketers Association are studying the code which was suggested by an Ohio oil man.

The Ohio code is similar to that of the Virginia Independent Oil Men's Association in that coupon books are to be sold and redeemed at face value. Gasoline and motor oil prices are to be posted at retail outlets. Both codes also would bar selling of gasoline from tank trucks to fuel tanks of automobiles.

On several topics the codes are different. The Ohio code would bar giving, loaning or leasing, for a nominal rental, equipment on the condition that it be used only in conjunction with the products of the renter. This refers to air compressors, driveways, storage tanks, painting buildings and signs other than those advertising the renter's goods.

Sec. 5 of the Virginia code, published in NATIONAL PETROLEUM NEWS of Jan. 18 page 18, provides that pumps and tanks can be loaned for the exclusive use of the renter's products, but the distributor is not tied up to the loaner exclusively. The giving of other equipment and services is barred.

The Ohio suggested code has a provision in Sec. 23 which does not allow a difference among customers, in price of gasoline sold for use, consumption or resale except that coming from selling different grades of goods or in transportation rates or in meeting competition. The Virginia code had the competition angle incorporated in the final clause, allowing signers to meet competition by using any policies condemned. Sec. 6 of the Virginia code required posting of wholesale prices and the adhering thereto.

On lease and license the Ohio code states that no distributor shall rent equipment or advertising space from any dealer or consumer at more than actual value. And that no distributor should lease a service station, equipment or real estate at greater than its appraised value.

The suggested Ohio code would prohibit bribing of chauffeurs and employes of customers to gain patronage. Employes of competing companies must not be approached with offers of increased salaries or other inducements, and shall not be hired until six months after termination of their former connection.

Misbranding, adulteration, imitating another's products are frowned upon. Bearing false witness against a competitor through false requests for quotations, prejudicing an advertising medium, tampering with competitor's products, are not countenanced.

The code also would have sellers report all violations of the state gasoline tax law to prevent these dealers from using this means for price competition.

Following is the suggested code for Ohio marketers.

Complete Text of Code Suggested for Ohio

Preamble: We believe in the oil business, we believe in the honesty and uprightness of character of the men and women who have developed it and been responsible for its wonderful growth. We are proud of its past and confident of its future.

We believe that men play a bigger part in the industrial development than do natural resources. An industry can be no better than the men who comprise it, therefore, we believe every man in the oil business should play his part nobly, as if he himself were the whole business, and its reputation and integrity depended upon him alone.

We are willing to give of our time, our money, our thoughts and energy to the point of sacrifice, to help promote the best interests of the industry, of which we have elected to be a part.

We are not afraid our competitor will make more money or gain greater prominence than we will, if we observe the highest and best ethical business policies. Nor will we be jealous and envious if he does. We want to live in our business and in our relations with our fellowmen, so that when we pass on with the innumerable caravan we may leave as a heritage a memory of service for the upbuilding and benefit, not only of our own estate but of the whole industry of which we have been a part.

We believe that the record which we shall leave behind us and the endurance of our memory will depend largely upon our relationship with our fellowmen, and the manner in which we have conducted our own business.

We firmly believe in the ultimate triumph of right. We believe a good name and a clean business are more to be sought than gushers, big refineries or much gallonage. We believe the standard of right, in all of its constancy, advances. We believe only man can dim the luster of the petroleum of the future. Its glory will be what we persistently help to make it.

The purpose of this Code of Ethics is to specifically define the unfair methods of competition in the distribution of petroleum products, intrastate and inter-state. The unfair methods of competition have been defined by the Supreme Court as,

"(First)—Those methods opposed to good morals, because characterized by destruction, fraud, or oppression; and, (Second) methods regarded as against public policy, because of their dangerous tendency unduly to hinder competition."

The specific practices which should be condemned by the Ohio Petroleum Marketers Association as constituting unfair methods of competition include the following:

1. Misbranding of products generally. Misrepresentation of products, specifications on labels, or false representation as to source of origin.

2. Adulterating or reducing the quality of a product without notifying purchasers of the fact. Representing a product as "pure" or selling it under such conditions that purchaser will believe it to be "pure" or will be misled as to its real character.

3. Giving presents of money or other things of value to the employes of customers with the object of securing continuation of patronage. Bribery of customers' employes generally. The giving of premiums, or bonuses, to dealers or employes of customers with the object of getting them to sell or consume a particular line of goods.

4. Persuading customers of competitors to break contracts for the sale of products, by misrepresenting the competitor's financial standing, his ability to deliver the goods, or other qualifications.

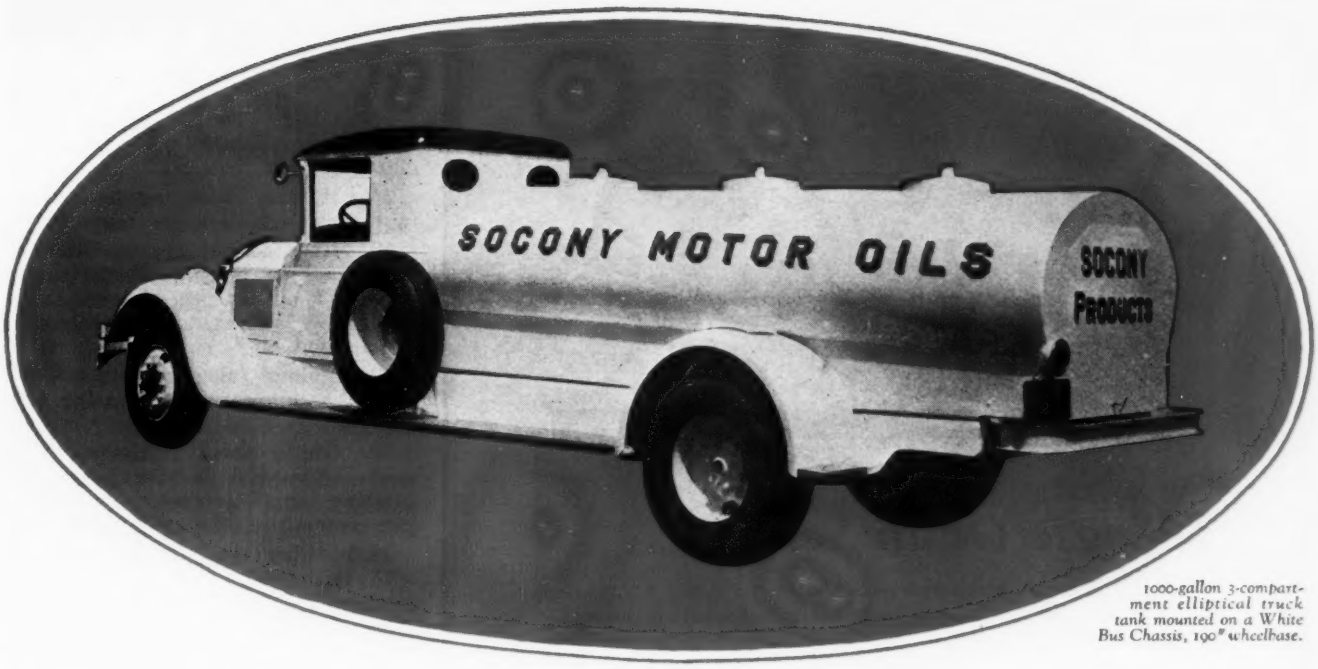
5. Stealing the business or trade secrets of competitors by espionage, or other unlawful means.

6. Making false statements generally as to the quality of competitive products, financial standing, business integrity, etc.

7. The publication of false or misleading advertisements as to the quality or quantity of goods, the possession of awards or orders from customers. Tampering with equipment or products sold by competitors for the purpose of discrediting them with purchasers.

8. Making extravagant contributions to trade associations for the purpose of injuring competitors who do not contribute in like proportions.

9. Passing off the goods of one manufacturer for those of another, by



1000-gallon 3-compartment elliptical truck tank mounted on a White Bus Chassis, 190" wheelbase.

Tanks DE LUXE

of New and Remarkable Construction

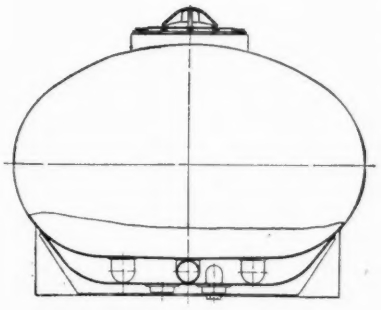
THIS Socony truck shows the grace and symmetry of S·H·S Tanks. The beauty of its surface and contour reflects quality in the product which it carries. S·H·S Tanks create favorable opinion.

But the new and remarkable construction of S·H·S Tanks means even more in *practical economy* than in the beauty inherent to its design. S·H·S Tanks are distinctive *both* in pleasing appearance and engineering results.

This all-steel tank, welded into one piece, and carried on a shock absorbing flexible suspension mounting, is a *marked* advance in tank building for the oil industry.

The heating system is in an integral compartment under the main body of the tank, permitting the exhaust heat from the engine to be applied to one-third of the tank surface. And all drain pipes, being enclosed in this compartment, are heated their full length. The heat may be turned on or off as desired.

Send today for literature describing the many unusual features of S·H·S Oil and Gasoline Tanks.



Cross-section view showing the heated compartment under the main body of tank in which all drain pipes are enclosed.

SMITH-HAMBURG-SCOTT WELDING CO.

505-511 West 57th Street
New York City

Harris Ave. at Marion St.
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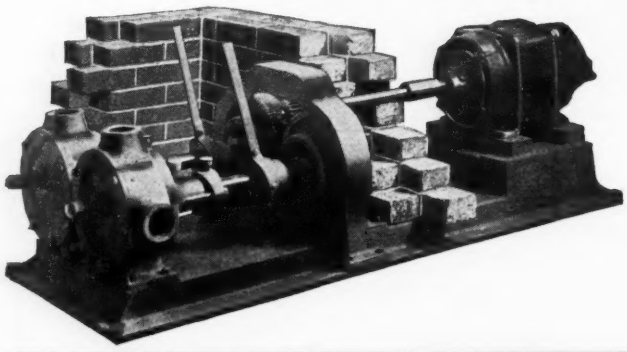
S·H·S TANKS



Viking Pumps— Single Or In Series

In the illustration above is shown a Viking Twin Oil Pump. Viking Pumps may be had in multiple series of from two to six pumps.

Our individual friction clutch makes it easy for each or any pump in the series to be operated independently of all the others or any number of the series may be used as desired. A different kind or grade of oil may be handled by each pump in the series at the same time. Capacities range from 50 to 200 gallons per pump per minute. Pumps in series can be furnished with or without fire wall base as desired.

For long life, permanent dependable performance and economical operation the Viking cannot be excelled. Complete catalog and a Special Oil Pump circular of particular interest to oil men free for the asking. Get the Viking Facts—Write us today.

Viking Pump Co., Cedar Falls, Iowa
Walkerville, Ontario, Canada

VIKING PUMPS

"Quick Service"

"Big Profits"

Safety Lift
16 Beaver Street, New York City

imitating labels, package designs, advertising copy and layout, corporate or trade names, etc.

10. Preventing competitors from procuring advertising space by misrepresenting their standing, or otherwise prejudicing advertising mediums against them.

11. Making false representations in the sale of stocks in corporations.

12. Unauthorized appropriations of the results of a competitor's ingenuity, labor or expense, thereby avoiding cost which would be involved in distribution.

13. Making false requests for quotations as a means of harassing competitors.

14. Giving away goods or selling goods below cost for the purpose of injuring small competitors or driving competitors out of a territory.

15. Selling goods at cost, or less, with misleading statements designed to show that they are sold at a profit, thus casting reflection on the competing products.

16. Giving away, loaning or leasing for a nominal rental, various kinds of equipment, on condition that it shall only be used in connection with the product to be marketed by the renter. Specific reference is made to air compressors, driveways, gasoline pumps and underground storage tanks, painting buildings and signs other than the signs which advertise the petroleum product sold by the distributor.

17. Selling goods through subsidiary corporations, controlled by a parent organization, and giving out information that such concerns are independent, competing organizations.

18. Selling a trade-mark brand of oil of a widely known value below cost on the condition that the purchaser buys other products to a total amount, thus implying that all of the goods offered are reduced in price.

19. Giving or offering to give rewards or premiums by means of a lottery or chance.

20. Soliciting and accepting orders from jobbers and retailers, with the understanding that in case of a price decline before the products are sold, a refund will be given equal to the price decline, on the unsold goods.

21. Soliciting orders on the basis of samples submitted and making deliveries of goods of poorer quality or different grade from that represented by the samples.

22. Giving a customer extra discount, free advertising service, or the services of special salesmen, on the condition that they do not handle competitive products.

23. That it shall be unethical for any distributor of petroleum products to discriminate in price between different purchases of petroleum products, which products are sold for use, consumption or resale, for the effect of such discrimination may be to substantially lessen competition, provided that the price between pur-

chases of petroleum products be made on the basis of grade, quality or quantity, or that due allowances for difference in price be made on the cost of selling or transportation, or discrimination in price in the same or different product be made to meet competition. Also that nothing shall prevent distributors from selecting their own customers in bonafide transactions.

24. All retail service stations and curb pumps should conspicuously post the price of gasoline and motor oil in order that the purchaser may have the price confirmed.

25. Coupon books should be sold at face value and redeemed on the same basis.

26. Employes of competitive companies should not be induced to leave the competitive company by promises of increased salaries or other considerations.

27. No employe of a competitive oil company should be employed within six months of the termination of his employment with that competitive company.

28. No service station should be built to offset a competitive company's service station, unless the topography of the city is such that in order to get proper representation such other locations are unavailable.

29. No deliveries should be made in tank trucks into the fuel tanks of passenger cars, trucks or tractors.

30. No deliveries of gasoline should be made from bulk plants on account of the fire hazards involved, and only in the case of a bonafide jobber.

31. No distributor should rent from any dealer or consumer any equipment or advertising space at a price greater than its actual value.

32. No distributor should lease real estate or service stations or equipment, greater than its actual appraised value.

33. All refiners, distributors and jobbers will pay the state gasoline tax on sales made and will also report any distributor taking advantage of the state and not paying his tax, enabling him to compete at a lower price.

NEW YORK, March 3.—Life insurance aggregating about $12,000,000 has been made available to its 6,500 men and women employees at a cost to them of 50 cents a month per thousand dollars by the Tide Water Oil Co. which will pay the remainder of the premium. Axtell J. Byles is president of Tide Water. The arrangement had been made with the Prudential Insurance Co. of America.

Employees receiving less than $175 monthly salary will now be able to get $3,000 insurance for $1.50 a month, while those receiving larger salaries will be able to get $5,000 insurance for $2.50 a month.

The Original Beacon Stations
(ALL METAL)

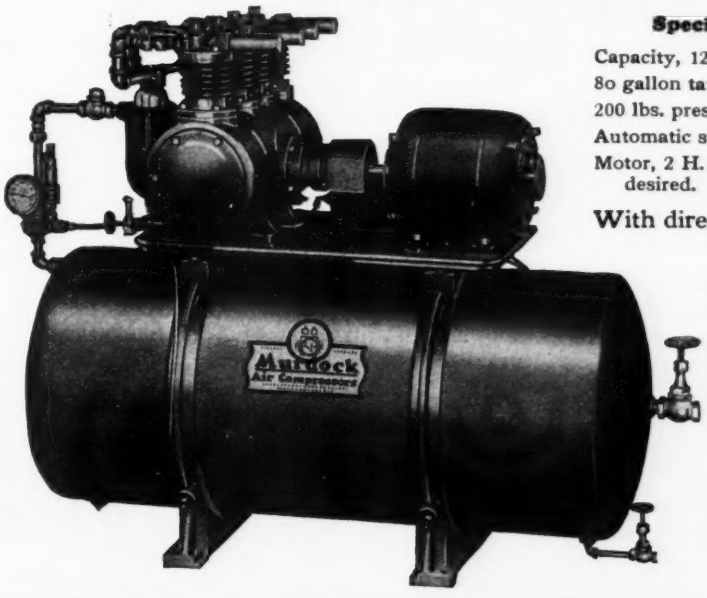
Unique and Distinctive, Proven Gallonage Producers.
Prices on Request
TERRITORY AVAILABLE FOR DISTRIBUTORS

Robert E. Smith
P. O. Box 1834 Asheville, N. C.

Murdock Air Compressors

Quiet • Dependable • Automatic
Compact and Neat in Design

This model—AC-12—has been specially developed to fill the needs of the super-service station.



Specifications:

Capacity, 12 cu. ft. per min.
80 gallon tank.
200 lbs. pressure.
Automatic switch control.
Motor, 2 H. P., any voltage desired.

With direct drive.

Murdock makes a compressor for every need—1½ to 24 cu. ft. per min. Write for full information today.

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The Holmes-Manley *Cracking* Process

Flexibility of Operation.

High Yield of Quality Gasoline direct from the Unit.

Fractionation and Condensation under Full Operating Pressure.

High Yield of Liquid Products with a minimum yield of fixed gas and carbon.

Low yield of Residue Fuel Oil of good Quality.

Relatively low Operating Temperatures.

Ease of Control.

Long Runs and High percentage of Operating Time.

Low Labor and Fuel Costs.

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THE TEXAS COMPANY

W. S. S. RODGERS

17 Battery Place, New York, N. Y.

Branch Office

Philtower Building, Tulsa, Okla.

The Erie Representative will be glad to explain how you can throw the "5-gallon habit" out of your business—how you can speed up service and boost gallonage. His experience in helping other oil marketers to solve their problems is available to you. Just drop us a note and we'll have the Erie Representative in your territory call. No obligation on your part at all.

THROW THE "5 Gallon Habit" OUT OF YOUR BUSINESS

THE "5 Gallon Habit"—like all bad habits—just grew. Forced upon the motoring public by a type of pump that put a limit on the unit of sale, the "5 gallon habit" has stuck because the motorist hasn't the patience to wait while attendant goes through the time-taking process of setting stops, cranking up gas and draining hose.

Throw the "5 gallon habit" out of your business. Don't let it limit the amount of your sales and stunt your profits. Install the Erie Meter System. The Erie Meter System is not a 5 or 10 gallon pump. It is a continuous flow method of dispensing gasoline at the rate of 20 gallons per minute. Faster service with the Erie Meter System enables you to get two or three extra gallons into the motorist's tank. Actual tests prove its ability to increase the average sale two and one-tenths (2 1/10) gallons.

Gallonage building power is only one outstanding feature of the Erie Meter System. Others are attractive appearance, accurate measure and time-proven efficiency. Nozzle control eliminates liability of gas overflowing—minimizes possibility of arguments and reflects a spirit of consideration for the appearance of customer's car.

New 16-page booklet sums up the business-building advantages of installing an Erie Meter System. Write today for your copy.

7 Reasons for Investing in an Erie Meter System

1. Continuous Flow.
2. Hyspeed Service.
3. Increases Gallonage.
4. Insures Constant Accuracy.
5. Stops Waste from Overfilling.
6. Engineered to sustain appearance and efficiency.
7. Continually Improved by Practical experience since 1921.

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10th and Wallace Streets, Erie, Pa.

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Send me a copy of your new 16-page booklet illustrating and describing the profit-building advantages of the Erie Meter System.

Your Name .....
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Address .....
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ERIE METER SYSTEMS

A Few Good Territories Open for Experienced Salesmen. Wire or Phone for Details.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

The Practical Scientific Man

AMONG a certain type of old timers there is a tendency to regard the highly educated scientific man as a visionary sort of person, groping in the foggy distance for dim ideals which would be of little use to ordinary hard working folks even if they could be realized.

At the refinery engineering symposium at the A.I.M.E. meeting it was highly trained scientists who argued most strongly that the more distant and hazy research problems be allowed to wait a while, as far as individual companies are concerned, until the technologists had better mastered their immediate job of making gasoline, kerosene and other products at the lowest possible cost and of the highest possible quality.

A paper in defense of research was read by H. W. Camp—it was a good paper too—its purpose was evidently to stimulate the very kind of discussion it brought out. Benjamin T. Brooks, a distinguished consulting petroleum chemist, Herschel G. Smith, technologist of the Gulf Refining Co. and Robert E. Wilson, a director of research of the Standard of Indiana, all voiced the opinion that it is of more immediate importance to improve refinery operating technic than to carry on abstract research. While these scientists do not minimize the value of pure research, they think that under present conditions its place is in the university laboratory rather than in the commercial refinery.

Pipe Still Design Advancing

THE importance in which the pipe still is held in the refining industry was indicated by the number of papers devoted to various phases of this subject at the meeting of the A.I.M.E. in New York last week, and the amount of discussion brought out by those papers.

Most any manufacturer of such equipment does not hesitate nowadays to undertake design and construction of a pipe still and fractionating unit to do almost anything the refiner wants to do within the limits of the crude on which he is to operate. The pipe still is showing itself to be capable of almost infinite variety of uses and the same pipe still unit can be changed over in an hour or two to an entirely new running schedule if the need arises.

Advantage of Constant Steam Pressure

WHEN Luis de Florez was speaking in the refinery engineering symposium at the A.I.M.E. meeting in New York last week on physical control of refining operations, he stressed the control of the boilers to assure constant steam pressure for operating pumps and other equipment throughout the plant, pointing out that irregular and uncontrollable operation of equipment driven by a variable steam pressure upsets operating schedules and sometimes reduces yields and injuries products.

A. Mullhaupt, chief engineer of the Kendall Refining Co., Bradford, Pa. confirmed Mr. de Florez' words from his own experience. He stated that in rerunning Dubbs distillate he got a gasoline yield 2 per cent greater when the steam supply was controlled to uniformity than when it was variable.

The refinery operating with fewer boilers than are needed to meet the full load placed upon them at times of peak demand has to pay a penalty.

Refining With Sulfur Dioxide

CHANGES are certainly taking place in the industry's idea of what constitutes a proper oil for lubricating the automobile engines of today. One company after another is bringing out new motor oils which represent more or less radical departures from the characteristics of oils of even a year or two ago.

The latest oil I have heard of is the new Cycol, recently put on the market by the Associated Oil Co. in California. I understand this oil is refined by the sulfur dioxide process, patents on which are owned by Dr. Lazar Edeleanu of Rumania. Dr. Edeleanu developed the sulfur dioxide process originally for making good commercial kerosene from Rumanian crudes which was impossible otherwise.

He was doing considerable work, and so was the Associated on the use of the process for treating lubricating oil when I was in California two years ago. The Associated at that time was using the process with great satisfaction for the manufacture of kerosene.

Details are lacking as to just how the treating process is carried out. It is stated, however, that treatment with sulfur dioxide gives an oil of much less tendency to deposit carbon in the engine, especially in the case of oils made from California crudes. How the process would work with oils from other crudes I do not know. Cycol is not a new name with the Associated, the company's motor oil having borne that name for several years. Only the oil is new.

Inasmuch as the substances removed from the oil dissolved in the sulfur dioxide are mostly aromatic hydrocarbons it is possible that they might be used for blending with gasoline to give anti-knock value. Considerable promise is understood to be offered in this regard.

How Long Will We Filter Oil?

WHILE methods of contact filtering of lubricating oil with fine clay are being perfected and multiple hearth furnaces for the reburning of coarse fuller's earth from percolating filters have been perfected, all tending to improve and cheapen filtering processes, the designers of pipe stills and fractionating equipment are going forward steadily, improving their operations in the direction of reducing the amount of filtering necessary.

Some refinery technologists think it won't be long now until finished oils—at least finished so far as filtering is concerned—will be taken off overhead from the bubble towers. It is understood that pressable wax distillates—pressable without cracking—is now being taken off direct from a bubble tower in more than one refinery, and also overhead cylinder stock.

Uniform Quality Goods Gave Jobber Control of Fuel Oil Trade

By A. S. James
N. P. N. STAFF WRITER

SPRINGFIELD, Mo., March 2 THE KARCHMER OIL CO. a year ago was unknown as far as fuel oil consumers here were concerned. The company's business was primarily in gasolines, kerosenes and a little gas oil.

Today this company virtually controls the fuel oil business in Springfield, and despite the competition from nearby coal fields of Missouri, Oklahoma and Arkansas, has been enjoying a volume business which has given a net return of around .75 to 1 cent a gallon.

And thereby hangs an interesting story of merchandising.

A year ago Jake Karchmer was having lunch with two or three friends when the discussion turned to the type of fuel oil then being sold in Springfield by two or three refiners and dealers. The fuel oil was not of uniform quality. One time the consumer would get a free flowing zero cold test oil which could easily be handled without steam coils. Then the next purchase likely as not would be a heavy, high cold test oil which put considerable strain on the motors, required some adjustments, and in extremely cold weather was almost impossible to handle.

"Why don't you handle some good fuel oil, Jake?" one of the party asked.

"Well, I might try it once," Jake replied.

Mr. Karchmer made a preliminary survey and found a source of supply which would furnish a uniform oil, round 28-30 gravity, zero cold test. He sold seven cars before the end of the season.

When the fuel oil season opened last fall, Mr. Karchmer was ready. He had obtained a list of the name of virtually every fuel oil consumer in Springfield, together with the type of burner installed. He went after the commercial accounts, although, as he said, "we didn't pass up the little ones either. We wanted the commercial accounts primarily because they offered a quicker turnover."

The company put on four fuel oil trucks, three equipped with pumps to handle any type of delivery. The other was kept on deliveries where dumps could be made by gravity flow.

"We prepared a list of big accounts and offered to keep their tanks filled without any trouble on their part," Mr. Karchmer said. "We kept our eyes on the rate of consumption at each tank, and we made it a point never to let that tank get too low. Perhaps the tank wouldn't hold all we hauled out there, but we saw that the customer never had to worry about a supply of fuel oil. We had a number of large accounts turned over to us in that way, and each month the only effort on the customers' part was to check the delivery bills and mail in the check.

"We said we were going to handle a uniform product, and we stuck to it. Customers found our oil gave a minimum amount of trouble, did not strain the motors, and was free flowing at low temperatures.

"We have kept our four trucks busy this season, the drivers at times being forced to work an hour or two after dark. When business is slack, as it will be occasionally, we have plenty of work to keep the drivers busy. Between the bulk station and the tire store, we can find something for them to do."

It might be explained here that the Karchmers originally owned a wholesale and retail tire store, and first entered the oil business about four years ago. They built their bulk station on a vacant lot adjoining the tire store and warehouse. The only service station operated by themselves is on the corner of the bulk station lot. Their plan is the usual one of supplying equipment to retail dealers of gasolines and oils, and supplying their needs at the regular tank wagon prices.

"Our fuel oil truck drivers have strict orders to clean up after every delivery," Mr. Karchmer declared, "Maybe the tank the driver is filling had a little more oil in it than he thought, and before he can cut off the pump some oil has overflowed. He cannot leave that tank until he has cleaned up to the best of his ability. It takes a little more time, but what's the additional time as compared with a list of satisfied customers.

"Next season we probably will have a man at least part of the time who will look after the burner adjustments and other technical and mechanical details. We will not attempt to overhaul the burners, but we will give our customers a certain amount of repair and adjustment service, along with expert advice as to the most successful method of operating the burners.

FUEL oil of uniform quality was the keynote of the success of the Karchmer Oil Co. in the burner oil business at Springfield, Mo. Starting from nothing in the fuel oil business this company in one year, built a trade requiring the services of four tank trucks, and this in the competition with nearby coal fields. The accompanying article tells how the Karchmer Oil Co. entered the fuel oil business and some factors making for its success.

Minnesota Jobbers Meet March 14 and 15

MINNEAPOLIS, March 2.—The Minnesota Petroleum Association will hold its annual convention at the Radisson hotel here March 14 and 15. Secretary Paul E. Hadlick announces the two-day meeting, full of valuable information for Minnesota jobbers with three sociable meals.

Howard Bennette, secretary of the Western Petroleum Refiners Association, is on the program, besides several speakers who have distinguished themselves recently at oil men's meetings, discussing technical subjects. R. B. White, Valvolene Oil Co., Chicago, will present his "Lubrication Catechism" once more and B. L. Majewski, Shaffer Oil & Refining Co., Chicago, will talk on "Follies of 1927." Two moving picture films, "The Story of Petroleum," and "The Story of Gasoline," will be shown.

800% PROFIT BASED

Operating Cost And Profit Due To Direct Vapor Phase

ACID TREATING 1000 BARRELS OF CRACKED GASOLINE

	Cost per barrel	
Direct Labor—General Supervision—Repairs — Acid—Soda—Water—Steam—Electric light, power, etc. Total.....	.09135	
Cost per 1000 barrels.....		$ 91.35
Loss of 4% due to Treating and Polymerization. 40 barrels at $3.36.....		134.40

COST OF RERUNNING 1000 BARRELS LESS 40 OR 960 BARRELS

	Cost per barrel	
Direct Labor—Supervision—Repairs—Store Expenses—Fuel expense—oil and gas—Water—Steam—Electric light and power—Miscellaneous. Total	$ .069695	
Cost per 960 barrels.....		$ 66.91
Loss of 4% due to rerunning. .04 x 960 = 38.4 barrels at $3.36.....		129.02
Total Cost Treating and Redistilling 1000 barrels of gasoline.....		$421.68

Note: The figures given above are actual operating costs obtained from a representative refinery and are based on a gasoline price of $.08 *per gallon.*

If you are a refiner or petroleum technologist interested in the subject, write for our bulletin "Vapor Phase Refining."

New Device Designed to Burn Sludge Coke Under Boiler

HOW to get rid of 115 tons a day of lubricating oil sludge and 15 tons of light oil sludge is the problem that confronts the Marland Refining Co., according to L. L. Davis, chemist with that company. He stated this at the refinery engineering meeting of the A.I.M.E. in New York in discussion of the paper of J. B. Rather on problems of acid disposal.

Mr. Davis described a burner that is now being installed at the Marland plant by means of which it is planned to burn the cokey sludge under the boilers. He went on to describe the Marland way of handling sludge as follows:

"Our practice is to separate the acid in the conventional type of open cooking kettle. The proper mixture of gas oil or other fluxing oil, water, light oil sludge and lube oil sludge being cooked with live steam until separation takes place and then settled. It has been found that a careful laboratory control of the process, particularly of the gravities of the component parts of the mixture, assures uniform and satisfactory results.

"The cooked sludge settles into three distinct layers. The lower layer consists of the weak acid which is drawn first, and is then charged to the Simonson-Mantius concentration plant. The upper layer is a liquid acid fuel oil which is easily handled in the circulating fuel system for firing the distilling equipment.

"The middle layer consists of the so-called acid "coke" and presents the most difficult problem. It is soft enough while hot to flow and can be drawn as a plastic mass from the kettles, but when cool sets to a brittle solid which will not soften on reheating. Up to two years ago our practice was to impound this material.

"Since then we have successfully adapted chain grate stokers to handle this material. The acid coke is mixed with half its weight of petroleum coke breeze from the cracking stills and the resulting mixture is charged in the usual manner to the chain grate stokers. We have two 100 square foot stokers under 550 horsepower boilers and have been able to maintain ratings of from 140 to 160 per cent with this fuel. However, the maintenance problem is severe as the clips burn out frequently due to difficulty in holding a uniform distribution of fuel and air over the entire grate.

"Recently a new type of burner has been developed by William M. Duncan and placed on the market by the Illinois Stoker Co., which shows excellent possibilities in handling both solid and liquid waste fuels. Burners of 500, 1500 and 3000 pounds per hour have been built and are operating under stills and boilers. Excellent fuel economy is obtained, the flue gases giving from 8 to 11 per cent CO_2 content.

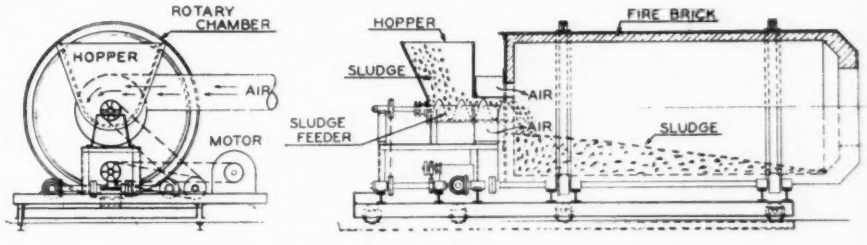
"We are now installing a Duncan burner designed to handle 4,000 pounds per hour of solid acid coke, under a 550 horsepower boiler.

"The burner itself consists of a cylindrical shell, 7 by 16 feet in size over all, fire brick lined, mounted in a substantially horizontal position on two annular runners resting on four trunnions. In appearance the burner resembles a small rotary kiln. A driving mechanism revolves the entire retort on trunnions.

"The fuel is fed into one end of the burner by means of a variable speed screw conveyor. Continual agitation is given the fuel mass by the rotation of the cylinder. In this way the fuel is brought in contact with the hot lining and gas is evolved which readily ignites, insuring continuous combustion. Air, under forced draft is admitted around the feed screw in a radial direction so that the fuel mass is completely consumed. Sufficient air may be used in the burner proper to give complete combustion, or if preferred, the burner can be operated as a gas producer and the combustion completed under the boiler or still with secondary air.

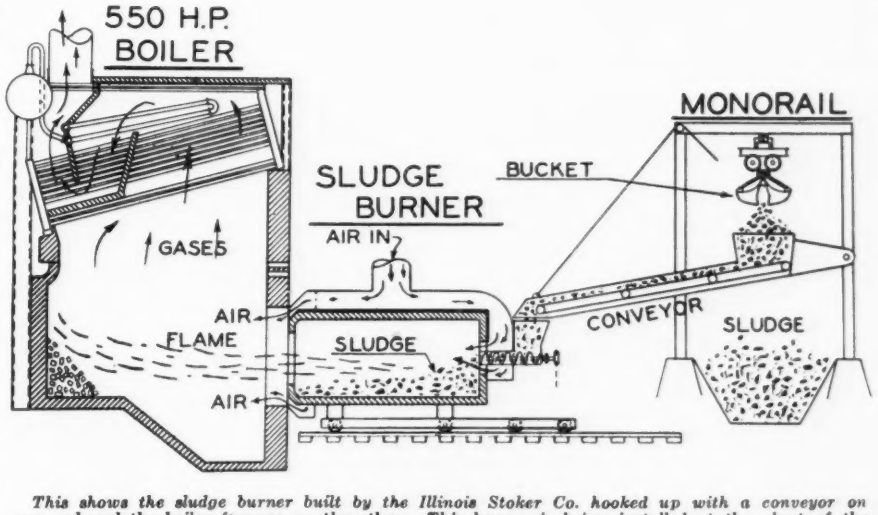
"The complete installation will consist of the burner as described above, a chain drag conveyor to transfer the sludge from a storage hopper to the burner feed hopper and an overhead crane and clam shell bucket for handling the sludge from the drain pits to the storage hopper.

"Although the burner is still in the development stage, we feel that it is a valuable contribution to the refining industry and may prove to be a solution to the acid sludge and waste oil disposal problem."



SLUDGE BURNER

Detail of the sludge burner being installed at Marland refinery.



This shows the sludge burner built by the Illinois Stoker Co. hooked up with a conveyor on one end and the boiler furnace on the other. This burner is being installed at the plant of the Marland Refining Co., Ponca City, Okla.

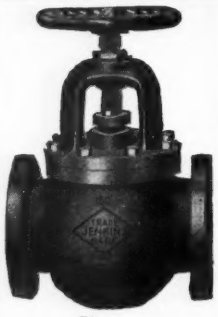


Fig. 142
Flanged Jenkins Standard Iron Body Globe Valve

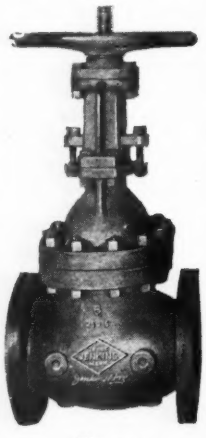


Fig. 204
Flanged, Jenkins Extra Heavy Iron Body Gate Valve

Rigid standards rigidly maintained

Rigid standards of manufacture are rigidly maintained to safeguard the user of Jenkins Iron Body Valves—to assure him of the same degree of trouble-free service as he has learned to expect of the bronze line.

Care is exercised in the selection of metal. The iron is analyses-proved by competent metallurgists, both before casting and after.

Design provides for strength where strength is needed—ample distribution of metal throughout the valve. This thoroughness is not enough, however; each valve must pass a test which allows a wide margin of safety.

Jenkins Iron Body Valves, as well as the bronze, are available through supply houses everywhere.

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Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

UTAH COARSE CLAY
for percolation
High Yield 100% Revivification
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200 MESH CLAY FOR DRY CONTACTING
Fast Filtering Low Oil Retention
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Let us show you how to reduce your filtration costs
WESTERN CLAY AND METALS CO.
Chamber of Commerce Bldg. Los Angeles

Campbell Osborn Resigns From Marland Staff

PONCA CITY, March 1.—Campbell Osborne, for eight years economic adviser to E. W. Marland, chairman of the board of Marland Oil Co., resigned today, effective April 1. Better opportunities for profit in the professional field were given by Mr. Osborne as the reason for asking to be released from his five-year contract with the company. He plans to practice law in Tulsa and Washington, D. C., specializing in oil litigation and matters before the departments and courts, and in consulting work in petroleum engineering.

Mr. Osborne is a member of the bar of the Supreme Court of the United States and of the District of Columbia. He graduated from Georgetown Law school, of Washington, D. C., in 1914. Prior to his association with Marland he was a member of the United States Geological Survey.

Production Men Change Positions

LOS ANGELES, March 1.—John Latton recently resigned his position as general superintendent of drilling operations for the Associated Oil Co. in California and was succeeded by A. E. Warren, formerly superintendent for the Associated at Ventura Avenue. Martin Mears, superintendent at Santa Fe Springs and La Habra district, was made superintendent at Ventura Avenue and Mr. Mears was succeeded by Enoch Williams, former superintendent at Dominguez and Rosecrans. F. C. Foster, superintendent at Inglewood, will handle Mr. Williams' former duties.

Kern River Refinery Dismantled

LOS ANGELES, March 1.—The King refinery, one of the first Independent refineries erected in Kern county, which has been shut down for three years, is being dismantled.

The plant was built nearly 20 years ago, in the Kern River field and for many years was noted for its excellent tractor oil. It was the first small refinery to commercialize the manufacture of lubricants from heavy Kern River crude.

Lube Freight Rate Increases Denied

KANSAS CITY, March 2.—The Public Service commission of Missouri recently denied the increase in oil rates asked by the railroads on L.C.L. shipments of lubricating oil. The announcement was made in a recent number of the Bulletin issued by the Missouri Oil Men's Association. George S. Allee, president of the M.O.M.A., says the decision has saved the oil men of his state from 100 to 125 per cent of their freight on this class of shipment.

Now For The Higher Pressures!

With absolute safety

THE largest Riveter in the world enables the building of Vogt Riveted Stills for high pressure and temperature operation using 3" plate and $2\frac{1}{2}$" rivets.

Henry Vogt Machine Co.
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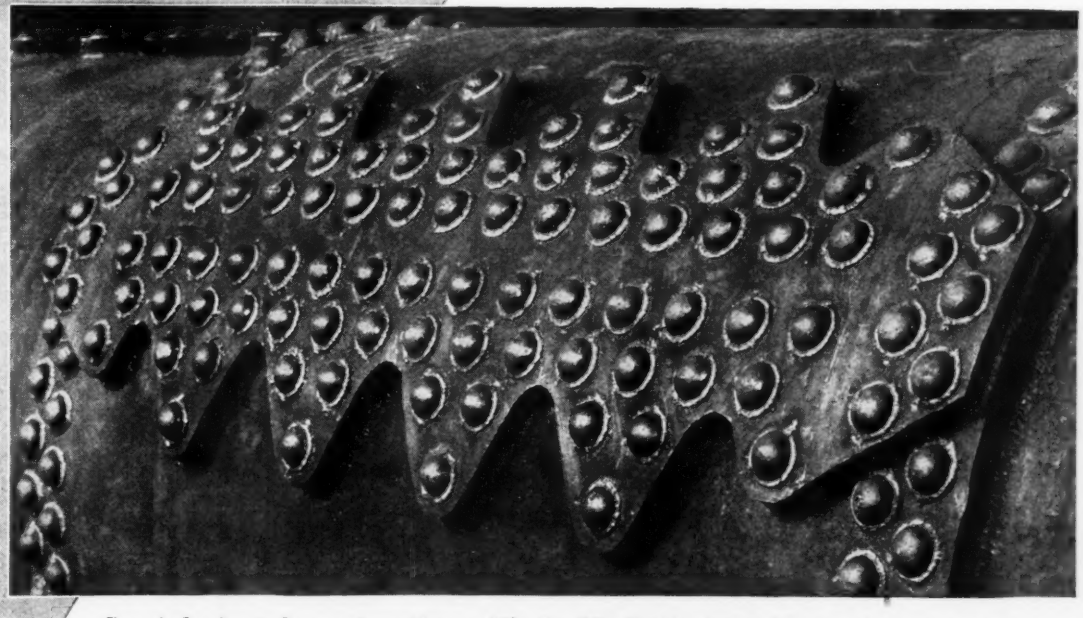


Special riveted construction with double butt strap joint where outside butt strap is of saw tooth construction and all rivets are in double shear

A 400 Gallon Buckeye Special on a Chevrolet Chassis

A Special Tank for Light Trucks

If you operate a Ford, Chevrolet, Dodge, or any other small truck, you are bound to be interested in the construction and price of the BUCKEYE SPECIAL.

Buckeye Specials are built substantially like the larger Buckeye jobs—come in sizes suitable for 1 and 1½ ton trucks—and are priced to interest you.

350 Gallons	400 Gallons	500 Gallons
Only $180	Only $195	Only $230

All prices f. o. b. Dayton, Ohio

Many filling station operators pay for their Buckeye Specials by hauling gas from bulk stations for their own needs, and for the needs of other filling stations.

Write for illustrated literature on both the Buckeye Special line, and on the regular line of Buckeye tanks for larger trucks.

The Buckeye Boiler Co.

1616 McLain St., Dayton, Ohio

Buckeye

ANNOUNCEMENT

CONCERNING

GRANBERG PETROLEUM METERS

The manufacture and sale of GRANBERG METERS which has been conducted heretofore under the name of the Associated Supply Co., will now be conducted under the name of

GRANBERG METER CORPORATION

GRANBERG PETROLEUM METERS are used by nationally known distributors and are simple, accurate and reliable, and indispensable where the precise measurement of petroleum oils is required.

Ask Those Who Are Using Them.

Our Engineers in the Middle West and at New York are ready to assist in serving you.

GRANBERG METER CORPORATION

"Precision Meters for Petroleum Oils"

79 New Montgomery St., San Francisco, Calif.

Builds Combined Airplane, Auto Service Station

TULSA, March 2.—The Phillips Petroleum Co. is building a combination service station for automobiles and airplanes at the Municipal airport at Wichita, Kan.

It is enlarging its distributing division also by entry into the Panhandle of Texas where it will build three bulk stations. One station is being erected at Amarillo and others will be built at Pampa and Borger. District offices will be maintained at Amarillo.

At Wichita the automobile service station now being built has been provided with a specially made tank truck for airplane service. The truck will provide water, two kinds of gasoline and motor oils for airplanes at hangars or on the field. The truck is equipped with pumps and suitable lengths of hose for delivering service to the planes.

Skelly Has New Brand

TULSA, March 2.—Skelly Oil Co. has begun the distribution of a new premium motor fuel which will be known as "Aromax." The name is intended to convey the thought that the gasoline contains a maximum beneficial percentage of aromatic hydrocarbon compounds.

Aromax is colored orange and is sold at a premium of 3 cents per gallon. It is available at most of the Skelly stations now and is being sold to the company's jobber customers.

The company has announced that the gasoline contains no dope and that it is made by a new process developed at the El Dorado, Kan., refinery under the direction of W. F. Rittman, Dr. C. K. Francis and K. J. Smith.

CLEVELAND, March 2.—The Ohio Public Service Co., a Henry L. Doherty Co. interest, began the sale of Quiet-All-Electric Electrol oil burners through nine Ohio cities last week. The cities are Alliance, Ashland, Elyria, Lorain, Mansfield, Port Clinton, Sandusky, Massillon and Warren. These cities will cover from 50 to 55 small towns and communities.

Final arrangements were made last week at a sales conference with the Cuyahoga Coal Co., Cleveland; W. L. Stow, president, and E. F. Marquard, representing the coal company; the new business managers of the Ohio Public Service Co., and representatives of the Electrol, Inc., St. Louis, manufacturers of the burner. The coal company is Ohio distributor for the burner.

The burner consumes an oil with a zero cold test, 200 flash and 220 fire, with gravity around 32.

At the End of the Rainbow

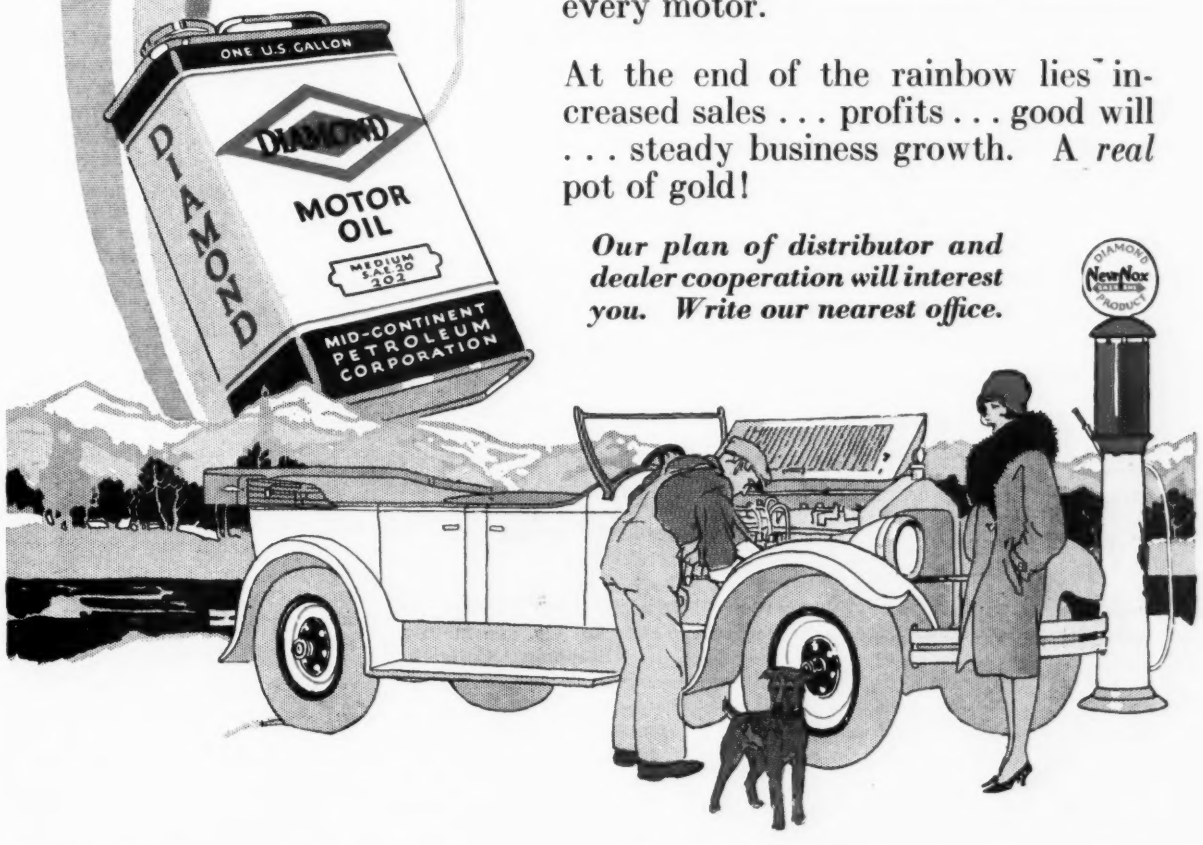
DIAMOND MOTOR OIL

A REAL treasure is DIAMOND MOTOR OIL—the improved, high heat tempered, modern lubricant.

DIAMOND MOTOR OIL is made from selected 100% paraffin crude from our 1600 producing wells—with a scientifically established grade for every motor.

At the end of the rainbow lies increased sales . . . profits . . . good will . . . steady business growth. A *real* pot of gold!

Our plan of distributor and dealer cooperation will interest you. Write our nearest office.



Mid-Continent Petroleum Corporation

General Offices ~ Cosden Building ~ Tulsa, Oklahoma

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Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

The famous geological report of Joseph A. Taff on the Arbuckle and Wichita Mountains of Oklahoma, issued in 1904 as a professional paper of the United States Geological Survey, is to be reprinted and made available for general distribution, says Charles N. Gould, director of the Oklahoma Geological Survey. Dr. Gould did not say whether the republication would be through the Oklahoma survey, but presumably it will. Taff's report has been long out of print and the few badly thumbed copies found in private libraries are highly treasured by their owners.

Mr. Taff, long identified with oil interests associated with the Southern Pacific railroad, now makes headquarters at San Francisco. He was chief geologist of the Pacific and Associated companies when the Pacific was sold to the Standard Oil Co. of California, about two years ago, and the Associated underwent merger with the Tide Water.

* * *

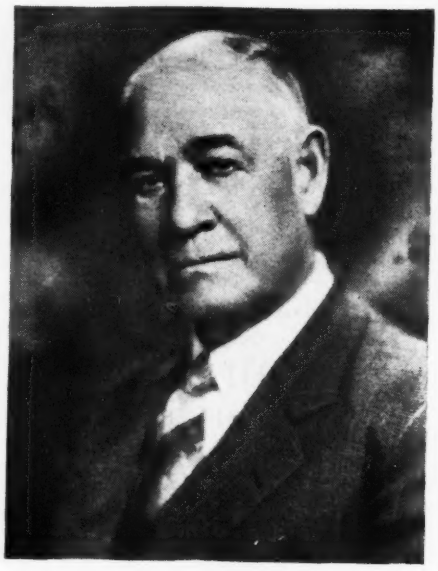
Dr. C. B. Forward, inventor of the vapor phase cracking process that bears his name, has returned to his home at Urbana, Ohio, after a business trip through the southwest. He visited at Port Arthur with his sons and grandchildren.

* * *

President R. C. Holmes of The Texas Co. qualified as a philosopher at a gathering of employes in the New York office recently. He made the point, in an organization talk, that "the capacity of a tank or cask is limited by its dimensions in feet and inches," but "the capacity of a man is not limited by any such measurements." Continuing, he said, "The capacity of a race horse, or its limit of speed, is in some respects much the same as with man; partially inherited, but very largely the result of grooming, proper feeding, exercising and painstaking development."

* * *

Francis T. Reed, secretary-treasurer of the Trinidad Oil Fields, Inc., advises from his New York office, 43 Exchange Place, that T. H. Grobe has returned to the Louisiana Oil Refining Corp., where he is assistant treasurer. Mr. Grobe was in foreign service of the Trinidad Oil Fields, being "loaned" by the associated Louisiana company, for about four months.



J. H. MOOK

J. H. Mook of Fort Worth, who recently became chairman of the board of the Mook Texas Oil Co., has rounded out more than a half century in the production of petroleum. His first well, at Gallaway Hill, near Franklin, Pa., was completed in 1877. He came to Texas in 1918, representing D. W. Franchot & Co., of Tulsa, but was also a stockholder in the Mook Texas company, organized by his son, R. H. Mook. In 1920, he became vice-president and general manager, which position he held until election as chairman of the board.

Between the period of Mr. Mook's operations in Pennsylvania and the time he settled in Fort Worth, he operated in nearly every field in Ohio and Indiana, and afterwards in Oklahoma and New Mexico. Operations of the Mook Texas Oil Co. are mainly in the Eastland, Stephens, Callahan and Brown county areas.

Besides membership in the American Petroleum Institute and the Mid-Continent Oil & Gas Association, Mr. Mook is identified with the Fort Worth Club; the Springville, New York, Masonic lodge; the Toledo, Ohio, Elks' organization; and the Ridgeway, Ontario, group of Canadian Foresters.

* * *

C. M. McCormick of the Bossier City refinery of the Louisiana Oil Refining Corp., and Miss Hazel McWilliams, Shreveport, were recently married.

E. N. Foster of the Gulf Production Co. is the 1928 president of the Purchasing Agents Association of Fort Worth. J. C. Williams of the Fort Worth Gas Co. was elected secretary-treasurer.

* * *

The "Old Red Barn," made famous by Pecos county, Texas, development on the Ira G. Yates ranch, burned about the middle of February. A picture of the "Red Barn," in the rear of the Yates ranch house, appeared on page 26 of the Feb. 8, 1928, issue of NATIONAL PETROLEUM NEWS. It had been converted into an oil field hotel, owned by Halamicek Bros., after oil development got under headway.

* * *

F. B. Gordon, vice president of California Petroleum Corp., Los Angeles, resigned, effective March 1, to engage in business for himself. He was in charge of land and leasing division activities of the "Calpet."

* * *

C. W. DeLancey has been transferred by the Humble Oil & Refining Co., to the Winkler county area of west Texas, to be drilling superintendent. He formerly was assistant to "Bink" Manning, general superintendent of drilling and production in the Gulf Coastal region.

* * *

I. G. Harmon of Ponca City, a director of the newly formed Marland Production Co., and formerly production vice president of the Marland Oil Co. of Texas at Fort Worth, made a business trip to Houston late in February.

* * *

J. L. McGrew is the new Midland, Texas, tank farm superintendent for the Atlantic Oil Producing Co., which recently began making "shuttle" shipments of crude through its 71-mile pipeline from the Hendricks field of Winkler county. Under agreement with Magnolia Petroleum Co., the Atlantic moves its oil east from Midland through Magnolia trunk facilities.

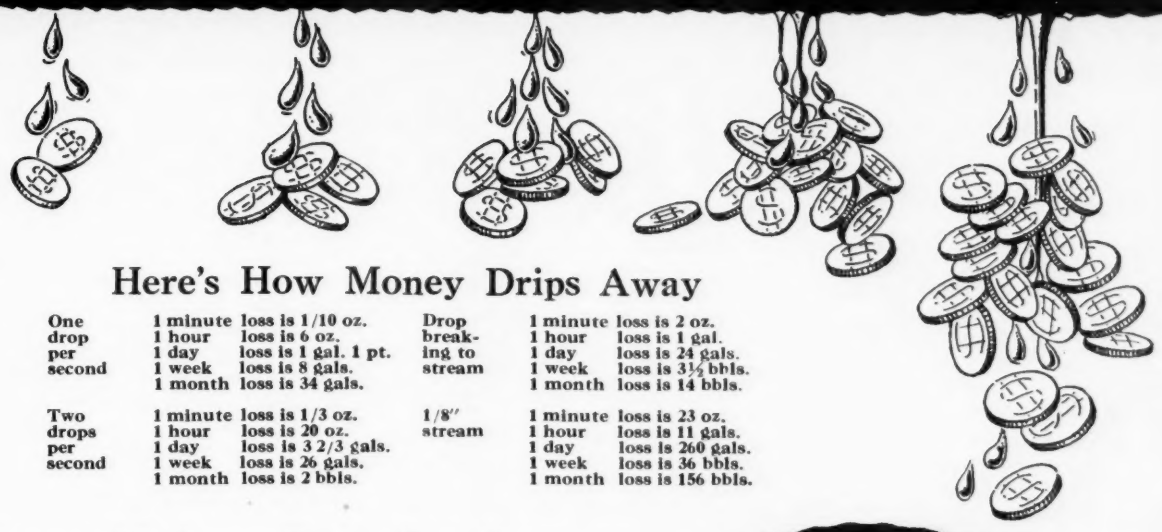
* * *

H. A. Manning, chief accountant of International Petroleum Co., Tampico, has returned to Mexico after a two months' vacation with his family in and around Windsor, England.

* * *

J. B. Moncrief, formerly an executive assistant in the production department of Marland Oil Co. of Texas, at Fort Worth, has been transferred to Carlsbad, New Mexico, from which point he will direct drilling operations on deep wildcat operations in Lea and Eddy counties. Four locations were recently announced in Secs. 19-26S-37E; 4-25S-36E; 20-23S-35E and 34-23S-31E. Six additional tests are planned on the 500,000 acres of leaseholds owned in the Permian salt basin region of southeastern New Mexico by Marland Oil Co. of Colorado.

Money drips away from leaking valves



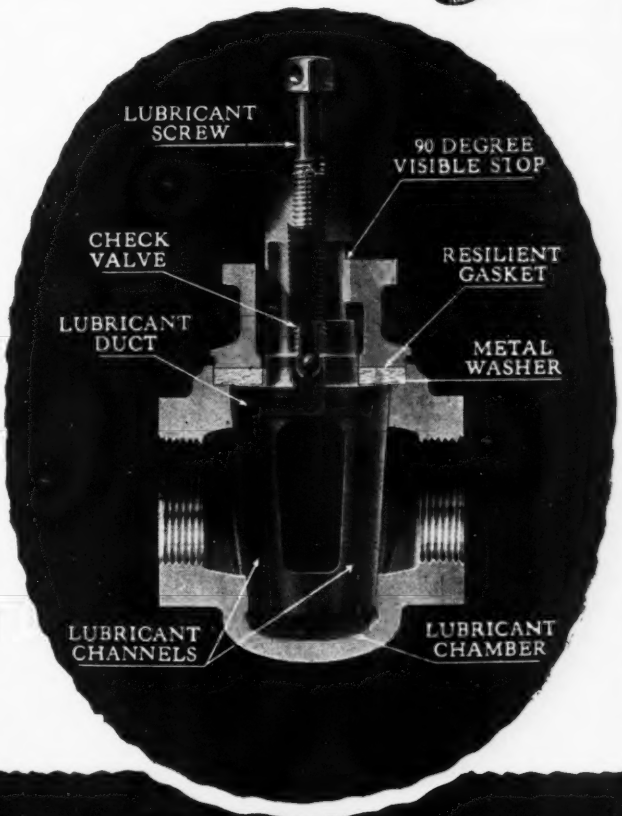
Here's How Money Drips Away

One drop per second	1 minute	loss is 1/10 oz.	Drop breaking to stream	1 minute	loss is 2 oz.
	1 hour	loss is 6 oz.		1 hour	loss is 1 gal.
	1 day	loss is 1 gal. 1 pt.		1 day	loss is 24 gals.
	1 week	loss is 8 gals.		1 week	loss is 3½ bbls.
	1 month	loss is 34 gals.		1 month	loss is 14 bbls.
Two drops per second	1 minute	loss is 1/3 oz.	1/8" stream	1 minute	loss is 23 oz.
	1 hour	loss is 20 oz.		1 hour	loss is 11 gals.
	1 day	loss is 3 2/3 gals.		1 day	loss is 260 gals.
	1 week	loss is 26 gals.		1 week	loss is 36 bbls.
	1 month	loss is 2 bbls.		1 month	loss is 156 bbls.

These Valves Stop Leaks

Using a lubricating principle Nordstrom Valves prevent leakage. Being of the plug cock type and completely surrounded by a lubricant film the plug is never separated from its seat sufficiently to allow intrusion of gas or foreign matter. The lubricant is forced by a set screw (hydraulic action) through a hole in the shank of plug alongside of plug to bottom of valve, lifting, greasing and sealing plug by hydraulic pressure.

A slight turn of the lubricating screw repeats the operation at any time. Merco Lubricant in stick form is used.



Merco Nordstrom Valve Company

SUBSIDIARY OF THE MERRILL COMPANY

Engineers—Manufacturers

TRADE MARK MERCO

San Francisco, 121 Second St.
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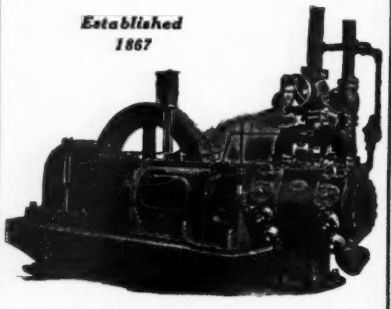
New York City, 11 W. 42nd St.
Houston, Petroleum Bldg.

Factories:
Oakland, Calif., and Belleville, N. J.
Agencies in principal cities

Nordstrom Valves

The Vilter Mfg. Co.
1136 Clinton Street, Milwaukee, Wis.

Established 1867



Vilter High Speed Refrigerator Machine

Oil Refinery Equipment
Refrigerating Machinery
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Gasoline Condensers

We will gladly figure on your requirements

Branch Offices in All Principal Cities

A
Tret-O-lite
Plant
is NOT expensive

Operators usually can arrange a Tret-O-litE plant, using equipment already on the lease. No heavy initial investment—no expensive equipment to stand idle when need for large treating capacity has passed.

The Tret-O-litE method is the fast, economical and THOROUGH method of recovering oil from emulsions.

WM. S. BARNICKEL & COMPANY
St. Louis, Mo.

Tret-O-lite

From a Geologist's Portable--

Letters on manners, customs and events as observed by a constant and long-distance traveler.

National Petroleum News

(PACASMAYO, PERU)

Dear Larry:

IT ALL came about because some clients went on a South American cruise and took some moving pictures with the much advertised "Rollio" camera. Aside from smoking room activities, this was the principal occupation of the party as they luxuriously progressed from port to port down the West coast and up the East. So when it was decided to investigate the oil possibilities of a certain region in the upper Amazon valley it was suggested that moving pictures of seepages would be an excellent idea, with possibly a few shots showing transportation methods and other features of general interest.

A camera was purchased, and numerous rolls of film, all packed for the tropics, were finally secured after some difficulty. All went well until the customs people at Callao insisted upon opening tin boxes and exposing films, to see whether or not they contained some sort of narcotic drugs. After consultations and waving of hands, and a tactical diversion to attract their attention away from the hiding place of a contraband gun and some ammunition, everything was finally passed; and a few days later was carefully packed in the interior of a couple of duffle bags ready for the mules over the mountains.

As I was traveling light, the mule contractor conceived the idea that my own lightly laden mules could well stand some of his cargo on top of the Gringo's pack. I arrived at the corral just in time to see a couple of sacks of cement being lashed down on top of the camera. They came off after an argument, and my pack mule started off lightly laden, and very proud of herself. So much so that about three hours after she bucked off the entire pack as a nuisance, tearing open the bags and strewing camera and films along the trail, while she was peacefully browsing.

Luckily nothing was broken, and after repacking we continued for several days, until the same mule went over a cliff, ending up on her back in a stream below. Again, nothing was seriously injured, and while the mule was abandoned, the camera was repacked under the curious eyes of the Indian arrieros, and the trip continued. We were not yet near the region which was to be examined, and as I had already secured a fine collection of photographs taken by another traveler along this preliminary route, it was not thought desirable to begin wasting films until later.

After about ten days muleback, we reached the first navigable river, and took canoes. Rains and the hazards of travel in dugout canoes made the care of camera and films a major worry throughout this portion of the trip; and it was with relief that I climbed on board the little river steamer we found at the mouth of the first stream. A week later, in the middle of the night, with jungle and swift water all around us, we punched a hole in the bottom of the craft on a submerged snag. All lights went out, but thanks to quick reflexes, I managed to transfer camera and saddle bags to the barge which had been torn loose from the tow. The next morning the boat and tow were able to proceed downstream, after some repairs, and while baggage was wet, the camera and films were again saved.

Finally Iquitos was reached, on the Amazon river, cold country clothes were left behind, and the camera included in the reassembled packs for Indian packers. Another boat was chartered to proceed to the beginning of the land trail, which was reached without further incident. Packs were immediately transferred to waiting Indians, and it was planned to get out the camera the next day for use.

About the middle of the next day, while crossing a swift stream, one of the packers lost his footing and was only pulled out after a thorough submergence. The pack was hurriedly opened, to save the camera and films if possible; when to my surprise the case was empty.

Someone in Iquitos had a modern movie camera, without any films; while I had plenty of films without a camera. The Indian packers had another example of a crazy Gringo doing his stuff; which was actually not a first class entertainment, as I was tired of carrying and nursing the thing anyway. The next time I will take a professional photographer to do the worrying for me; or else revert to a vest pocket camera.

Bill.

TULSA, March 1.—The latest demand for electrical power on the Oklahoma Gas and Electric Co. at Shawnee is a 450-horsepower plant of the Sinclair Pipe Line Co. on that company's main line near Maud. This station is on the Sinclair line, the Seminole area to Texas. Another new pump station operated on electric power is the Etowah station of the Magnolia Pipe Line Co. in Cleveland county, two miles from the Pottawatomie county line.

MORE THAN 5,000 FEET OF THIS HOLE SUCCESSFULLY DRILLED WITH

HUGHES ROCK BITS

From right to left: H. W. Ballard, L. C. Tompkins, C. A. Ridley

Thompson No. 1

Wirt Franklin & Cromwell Oil and Gas Co.

Oklahoma County, Oklahoma

6,660 Feet of Rotary Hole

4700 ft. 11" hole
1960 ft. 7⅞" hole

7⅞" hole drilled entirely with

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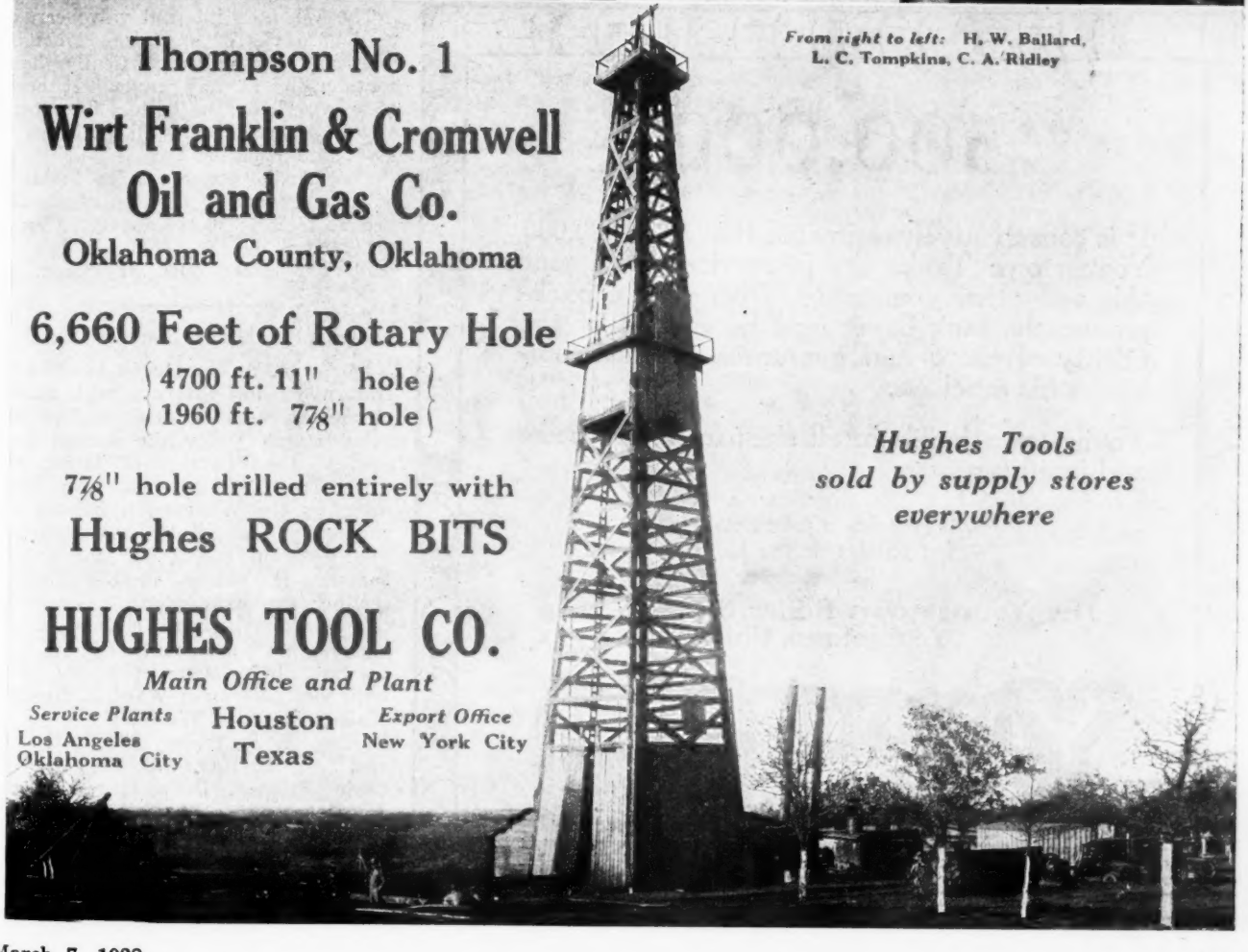

Filtering of Doctor Solutions Has a Two-fold Advantage

SOME plants are obtaining a two-fold advantage by filtering doctor solutions.

PbS, which is marketable, is one; the clarified solution, which can be fortified, is the other.

Sweetland Pressure Filters are making this possible for these refineries—as they could for your refinery.

UNITED FILTERS CORPORATION

Hazleton, Pa.—Los Angeles Office, Central Building

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Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

Bubble Towers

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San Francisco, Cal. . . . . 444 Market St.
Los Angeles, Cal. . . . 329 Petroleum Sec. Bldg.

"500,000"

It is conservatively estimated that fully 500,000 Youngstown Tanks are in service throughout this and other countries. With such a background the tank buyer may be assured of the fidelity of the 5-year guarantee which accompanies his purchase.

Youngstown builds in all sizes for all purposes and in all types.

Write for a free copy of Bulletin No. 15.

The Youngstown Boiler & Tank Co.
Youngstown, Ohio

Youngstown TANKS "KEENE STANDARDIZED MADE"

Wheaton Has New Valve for Tanks

NEWARK, N. J., March 1.—A new internal valve designed especially for storage tanks has been brought out by the A. W. Wheaton Brass Works, here, which has a safety feature for protecting stocks from wastage and dangers resulting from carelessness.

This new Wheaton product is made of special analysis brass alloy, and will not corrode or crystallize. It is fitted and finished with characteristic Wheaton precision. The perfectly true, smooth surface of the rim of the gate closes against the equally true, smooth surface of the flange on the body of the valve, and makes a leak-proof seal.

In opening the valve, the seal is broken by an eccentric pressure-breaker device attached to the gate which is connected by a shackle to the chain, cable or brass rod running up to the crank or handle device. The slightest pressure on the handle is sufficient to open the gate. It is claimed that this valve will not stick.

When the crank, or handle, is released, the gate closes automatically. Wheaton also makes a special fitting with a fusible link to use in conjunction with the valve and handle device, so that in case of fire the fusible link will melt, release the gate and allow the valve to close automatically.

The Wheaton internal valve can be used on tanks of any size or height, and can be installed vertically, horizontally, or at any angle. It operates as well on the bottom of a tank as on the walls. In all positions it gives full capacity flow.

The handle device can be installed at any convenient position above the ground from 18 inches above the valve to the top of the tank. It can be padlocked either open or closed.

Chamber of Mines Banquet March 8

LOS ANGELES, March 1.—The oil fraternity of California will gather at the Ambassador hotel in Los Angeles March 8 for the annual banquet of the Chamber of Mines and Oil. The arrangements are being made by the Wildcats, a booster organization, named by the chamber. The program issued for the annual banquet is unique in old English spelling and expressions. The Wildcat sub-committee in charge of the banquet is composed of W. L. Stewart, Jr., chairman; Harry Maxwell, vice chairman; Ward B. Blodget, Walker S. Clute, W. W. Copp, W. E. Dunlap, F. E. Foster, W. R. Guiberson, A. S. Hays, Edwin Higgins, Lorin Hillman, Dana Hogan, Harry A. Kassebaum, Wendell M. Smith, J. U. Stair, E. Butterworth, Jos. A. Dunn, C. E. Olmstead and Glenn D. Robertson.

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

Preferred Oil Burners, Inc., Peoria, Ill., has announced these new appointments to its sales staff:

R. L. Stutzman, recently district representative for Williams Oil-O-Matic Heating Corp., Bloomington, Ill., appointed southeastern division manager, with headquarters at Atlanta, Ga.

J. G. Dierkes, formerly with Merchants & Manufacturers Securities Co., appointed manager of the Chicago division; W. A. Matheson, formerly with Power Plant Engineering Co., Seattle, assistant sales manager; and F. E. Heighway, recently advertising manager of the Lincoln Oil Refinery Co., Robinson, Ill., assistant advertising manager.

* * *

Engberg's Electric & Mechanical Works, St. Joseph, Mich., has off the press bulletins Nos. 6022, 6023 and 6025, describing Engberg bracket-type generators, direct current motors and motor generators. Dimensions, illustrations, prices and capacities are included.

* * *

Williams Oil-O-Matic Heating Corp., Bloomington, Ill., is forecasting a bright future for the oil burner industry, basing its forecasts on the unprecedented attendance at its regional sales and service schools which it conducts in various cities for its salesmen and dealers. During January and the first few days of February, 12 meetings were held with a total attendance of 904, Boston having the largest with 180. Dealers have shown most interest in the company's model J.

The company has also demonstrated the new Williams Ice-O-Matic at a few of the schools and reports that it was favorably received, according to G. Bernard Riddle, editor of Oil-O-Matic News.

* * *

The International Derrick & Equipment Co., Columbus, O., has included in the building which it has just erected, assembly rooms for the Ideco club, which was organized by employes on Jan. 31. The purpose of the club is to further company spirit, promote closer fellowship and provide educational and social benefits.

Harry M. Runkle, president of the company, included plans for meeting rooms when the plans for the building were made. These rooms include the larger part of the basement and consist of billiard and card rooms, an auditorium with moving picture outfit, rest rooms and kitchen. Summer camps will also be established by the company where employes may take their families for vacations at minimum expense.

These officers and board of governors for the club were elected: M. A. Keith, Columbus, president; John L. Hamilton, vice president; L. L. Powell, Dallas, Tex., vice president for the Mid-Continent district; W. B. Tobin, Torrance, Calif., vice president for the Pacific coast district; C. G. Runkle, treasurer; R. H. Harvey, assistant treasurer; J. B. Anawalt, secretary; and Mrs. E. C. Meredith, assistant secretary.

Board of governors: J. B. Anawalt, M. O. Downing, G. P. Dysart, C. E. Firestone, Sr., J. L. Hamilton, R. H. Harvey, M. A. Keith, Mrs. E. C. Meredith, L. L. Powell, C. G. Runkle, C. E. Schuler and W. B. Tobin.

* * *

Joseph D. Leimert, Chicago representative of the Triplex Safety Glass Co. of North America, has announced a change in the name of B-K Brake Corp., Triplex distributor, to Hoyt Distributing Corp. Address remains 844 Rush St., Chicago.

* * *

The Lincoln Electric Co., Cleveland, has off the press a bulletin on the starting and operating characteristics of the Lincoln switch-start motor, among which, the company claims, are that no compensators or resistance switch are needed, as the starting current will be below the limit set by the N. E. L. A. whether full load or more than full load is thrown across the line.

The high maximum or pullout torque assures that the switch-start will not stall on sudden high overloads, according to the company. Better cooling is another feature and the arc-welded frame gives greater space for cooling air as well as making the frame stronger and more rigid.

* * *

Indiana Truck Corp., Marion, Ind., has announced that shipments of its trucks for January, 1928 increased 60 per cent over January, 1927, following an increase of 29.5 per cent in December, 1927 over December, 1926, according to E. A. Kightlinger, vice president.

* * *

General Electric Co., Schenectady, N. Y. has developed three new drum switches for use with squirrel-cage and slip-ring motors, designed particularly for the control of small cranes, hoists, machine tools, etc. They can also be applied on work where a small and inexpensive drum switch is desired for the control for these types of motor.

TRIPLEXD
GASOLINE HOSE

ALL sizes and lengths of Triplexd Hose are carried in stock in these cities:

LOUISVILLE:
664 South Second Street
MEMPHIS: 245 Monroe Ave.
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Dixie Culvert & Metal Co.
ATLANTA: P. O. Box 1343
RICHMOND: P. O. Box 514
BROOKLYN: 236 Tillary St.
BOSTON: 142 Berkeley St.
PITTSBURGH:
341 Second Avenue
CLEVELAND: 4336 Broadway
CINCINNATI:
450 East Pearl Street
DETROIT:
5459 Grand River Avenue
ST. LOUIS: 1621 Pine Street
KANSAS CITY:
13th Street and Eastern Ave.
CHICAGO:
1213 W. Washington Blvd.
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1401 South Flores Street
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700 N. San Jacinto Street
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1020 East Overland Street
WICHITA FALLS:
P. O. Box 1327
NEW ORLEANS:
211 South Peters Street
MINNEAPOLIS:
900 Sixth Ave., S. E.
DENVER: 4800 York Street
SAN FRANCISCO:
873 Mills Building
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1625 South Hill Street
SEATTLE: 67 Columbia St.
OMAHA: 13th & Willis Sts.
TORONTO, CAN.: Dunlop Tire & Rubber Goods Company, Limited
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METAL HOSE & TUBING CO.
INCORPORATED
236 Tillary Street
BROOKLYN, N.Y.

GULF
Refining
Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Houston, Atlanta, Boston, New Orleans, Tampa, Philadelphia, Louisville

REFINERS OF OKLAHOMA
TEXAS AND LOUISIANA

PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
PETROLEUM COKE

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

New Patents

Feb. 14

REFINING

Refinery Power Plant—Milton J. Trumble, Alhambra, Calif. Filed Dec. 1, 1922. No. 1,658,910.

Apparatus for the Conversion of Hydrocarbon Oils—Eric T. Hessle and Willy Leigemann, Lockport, Ill. Filed March 20, 1925. No. 1,658,985.

Apparatus for Treating Hydrocarbons—Gustav Egloff and Harry P. Benner, Chicago, Ill., assignors to Universal Oil Products Company, Chicago, Ill. Filed July 23, 1920. No. 1,659,397.

Process for Cracking Oil—Gustav Egloff and Harry P. Benner, Chicago, Ill., assignors to Universal Oil Products Company, Chicago, Ill. Filed Jan. 11, 1926. No. 1,659,398.

PRODUCTION

Oil-Well Safety Head—Gustave J. Corimer, Long Beach, Calif. Filed March 24, 1926. No. 1,659,244.

Drilling Appliance—Gustavus A. Montgomery, Titusville, Pa. Filed Sept. 15, 1925. No. 1,659,327.

Tubing Bleeder—Elmer D. Smyser, Fellows, Calif., assignor of one-third to Roy M. Smith and Perl E. Williams, Fellows, Calif. Filed March 31, 1925. No. 1,659,335.

Combined Guide Plug and Float Valve for Well Casings—Lee J. Black, Beaumont, Tex. Filed July 19, 1927. No. 1,659,478.

Underreamer—Charles H. Brown, Breckenridge, Tex. Filed May 28, 1926. No. 1,659,514.

MISCELLANEOUS

System for Discharging Lubricants from Vehicle Motors—Henry D. Collier, San Francisco, Calif., assignor to Standard Oil Company of California, San Francisco, Calif. Filed Oct. 11, 1924. No. 1,659,019.

Lubricating Compound and Method of Making Same—Steven G. Bedlovitz, Cleveland, Ohio, assignor to The Electro Compound Company, Cleveland, Ohio. Filed Feb. 19, 1924. No. 1,659,075.

Lubricating Composition—Edward A. Nill, Cleveland, Ohio, assignor to Frederick C. Acker, Cleveland Heights, Ohio and James R. Dall, Norwalk, Ohio. Filed May 4, 1923. No. 1,659,149.

Method and Apparatus for Filling Gas Tanks—Claude R. Thomas, Youngstown, Ohio, assignor to The Ohio Oxygen Company, Niles Ohio. Filed Jan. 29, 1927. No. 1,659,384.

Oil-Viscosity Tester—Frank B. Mason, New Providence, N. J. Filed Jan. 16, 1926. No. 1,659,534.

New Technical Paper Announced

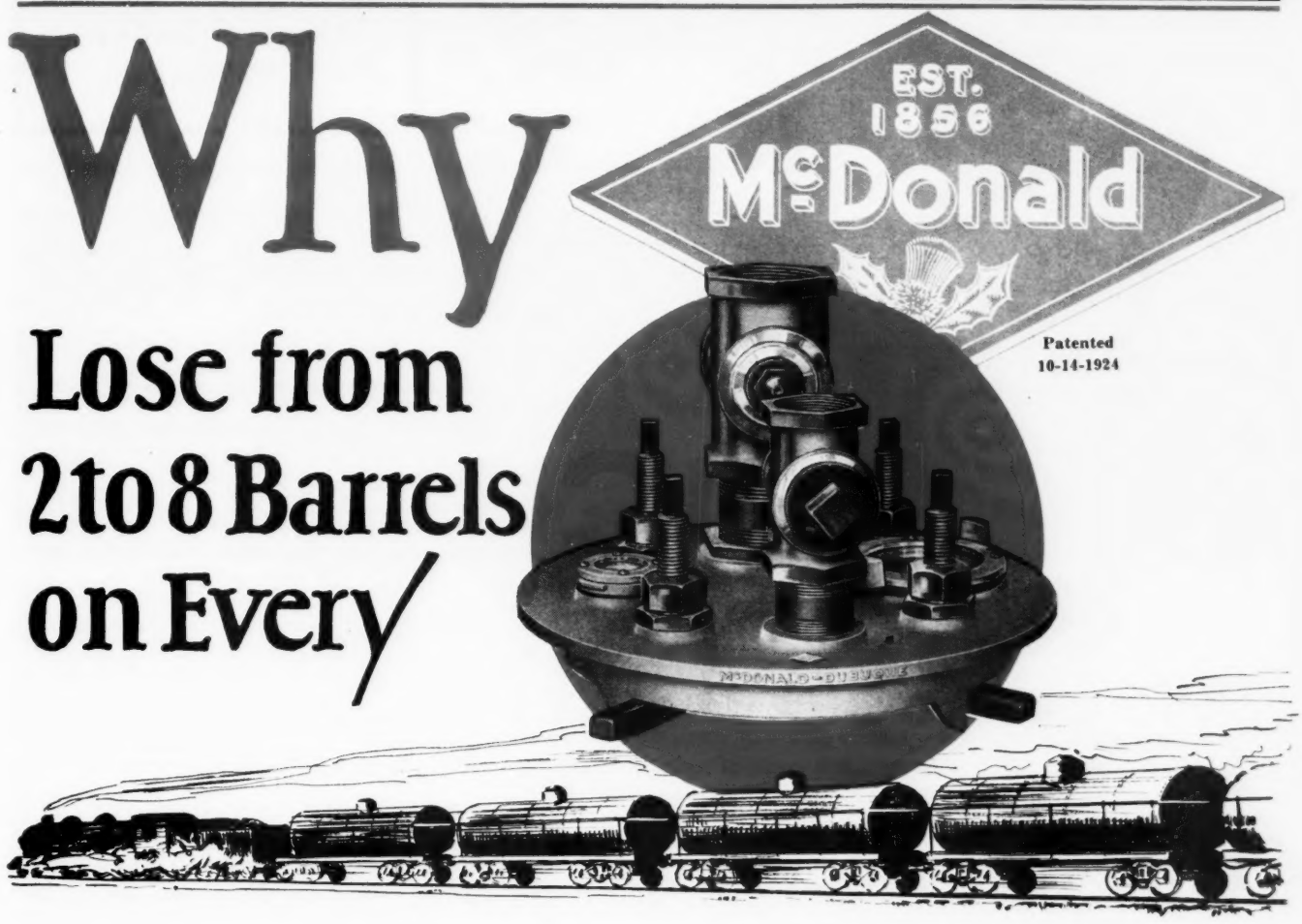
WASHINGTON, March 1.—A new technical paper on oil by the Bureau of Mines is that on U. S. government specification for lubricants and liquid fuels and methods for sampling and testing, which is technical paper 323B. This may be obtained for 15 cents from the superintendent of documents, government printing office, Washington.

AC Spark Plug Co., a subsidiary of General Motors Corp., Detroit, reached a new peak in sales during January when sales increased 25 per cent over January, 1927, the previous high month. Employment gained 16 per cent, according to B. W. de Guichard, president and general manager.

Why Lose from 2 to 8 Barrels on Every

EST. 1856
McDonald

Patented
10-14-1924



Tank Car Loaded

When McDonald Universal Gastite Dome Covers Positively Stop All Evaporation Losses!

One refiner saved $125,000 in 17 months. Another saved as high as 10% on every car loaded.

McDonald Universal Dome Covers not only eliminate evaporation losses but prevent explosions and also allow loading day or night, rain or shine. They are ABSOLUTE NECESSITIES for the safe, economical loading of gasoline.

Made for every type of tank car. Write today for further information.

"The Home of the Swing Joint"

A. Y. McDONALD MFG. CO.

Dubuque, Iowa

Omaha Minneapolis Des Moines Kansas City

There's A McDonald Distributor Near You

McDONALD

"DEFIANCE"

UNDER THE SKIN

THE skin of a steel barrel is the "specification". It covers gauge of steel, size, shape, style and perhaps color of paint to be used.

But under the "skin" you find the character, the integrity, the ideals of the steel barrel manufacturer—and these are more important than specifications.

Have you ever heard of a Defiance Steel Barrel not living up to *MORE* than the specifications called for?

Neither have we.

THE AMERICAN STEEL PACKAGE CO.

Defiance, Ohio

Faster Service at Your Filling Stations

ALLISON COUPON BOOKS

Accurate — Compact — Convenient

Wide-awake filling stations are speeding up their service with Allison Coupon Books. No time wasted making change. No large cash balance on hand to invite theft. Furnished in stock or special designs. Absolute accuracy guaranteed. Send for samples and prices.

Allison Coupon Company

Indianapolis, Indiana

Coupon Book Specialists Since 1888.

New Stations Building

Marietta, O.—R. B. Newman will build filling station.

Waynesfield, O.—M. & B. Oil Co. seeks property for filling station.

Siloam Springs, Ark.—Continental Oil Co., Denver, Colo., plans to build filling station.

Kingfisher, Okla.—Dunlap & Morton will build filling station.

Blackwell, Okla.—Champlin Refining Co. will build filling station.

Hutchinson, Kan.—Skelly Oil Co. and P. O. Hubenot will each build filling station here.

Hardtner, Kan.—Golden Rule Oil Co. will erect filling station.

Council Grove, Kan.—J. F. Harvey is completing filling station.

Conway, Ark.—S. E. Johnson will build filling station.

Liberal, Kan.—W. D. Pittser is completing filling station.

Bath, W. Va.—H. B. Hovermale seeks permit for filling station.

Cambridge, O.—Standard Oil Co. of Ohio will build filling station.

Wooster, O.—Roxana Petroleum Corp. will build filling station.

Indianapolis, Ind.—Pure Oil Co. will build filling station.

Mediapolis, Ia.—O. E. Davis will build filling station.

Ayrshire, Ia.—Ralph Cushion, of St. Charles will build filling station here.

Urbana, O.—Louisiana Oil Refining Co. will build filling station.

Elyria, O.—Columbia Refining Co., Cleveland, seeks permit for filling station.

Jefferson, O.—Tuttle Oil & Gas Co., Kingsville, is building filling station.

White Plains, N. Y.—Louis Edelstein is building filling station.

McCook, Neb.—Mrs. Edith Hall will add filling station to her tourist camp here.

Brookville, Ind.—Walter R. Smith, proprietor of Brookville filling station, is building garage and filling station.

Madison, Wis.—Capitol Oil Co. to erect filling station.

Madison, Wis.—Robert Mitchell Co. will build auto service and filling station.

Rapid City, S. D.—M. E. Blood, manager of Blood Auto Supply Co., will build filling station and accessory shop.

Fargo, N. D.—Standard Oil Co. of Indiana will build filling station.

Dover, N. H.—Rowell & Watson is completing super service station here, and will build several additional stations in the spring.

Wilmington, N. C.—J. L. Cruse seeks permit for filling station.

Harrisburg, Pa.—Harrisburg Oil & Supply Co. will build filling station.

Providence, R. I.—Permits for 14 filling stations are being sought here, 11 of which are by Dutee W. Flint Oil Co.; one by William DeGoey; one by The Texas Co.; and one by Carmine Petteruti.

Del Rio, Tex.—Dick Owens is building filling station.

Grandfield, Okla.—Booker Ried is completing filling station.

Falfurrias, Tex.—Jack Casey is building filling station.

LaCrosse, Kan.—Otto and Will Renz will build filling station.

Rowena, Tex.—William Gallia is completing filling station.

How Business Men Can Find Time To Read

By John Allen Murphy

National Petroleum News

IT IS a question whether it is better policy for a business man to set aside a certain time each day for reading, or to depend on doing his reading in the spare moments that fall his way.

The trouble with the first plan is that, as a rule, not more than 30 minutes a day will be scheduled for reading. And on countless occasions that program will be interrupted, so that on many days no reading at all will be done.

The objection to the second plan is that it is too haphazard. The important matter of reading is left entirely to chance. The person who reads only when he has nothing else to do, will never form the reading habit. To get much help from reading, a person must read systematically. That can only be done by developing a habit that will take one to his books and periodicals as regularly as he goes to the dining table.

Probably the best reading system is a combination of the spare-moments and the fixed-time methods. That is the plan that is followed by many business men. Herbert J. Tily, president of Strawbridge & Clothier, the Philadelphia department store, tells me that is the system he uses. He says: "Current business literature, such as trade magazines, timely articles with some direct significance to the business which I manage, I endeavor to read during business hours, and am successful in this, with some exceptions; that is, the program is necessarily interfered with on exceptionally busy days. My most persistent habit, however, is that of reading the last thing every night. I do not think I have gone to bed a dozen times in the last 30 years without, at least, a half-hour's reading in my bedroom, even though I had spent some time in reading earlier in the evening. And then, again, I frequently read quite early in the morning before leaving my room, if I happen to be 'slept out', as is frequently the case."

Another department store man, Edgar S. Bamberger, of Newark, has the habit of doing a little reading each night before he goes to sleep. "It is surprising", he writes, "how much can be read in 10 or 15 minutes a day."

Saunders Norvell, now president of the Remington Arms Co., does a tremendous amount of reading. He, too, reads systematically before retiring for the night. He states: "All of my life, even up until the present time, I have had the habit of reading late at night. When my children were young, I could not read with any comfort until after they were all tucked in bed. This led to my reading from 11 o'clock until one in the morning. From eleven to one are my favorite reading hours. Everything is quiet and there are no interruptions."

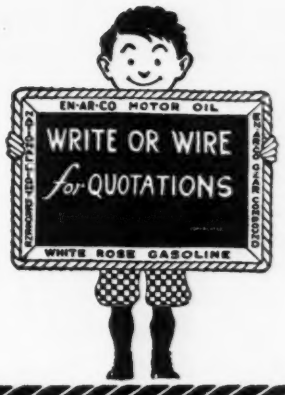
Bruce Barton, who has attained distinction both as a business man and as an author, informs me that from his earliest years he has always done some reading before turning the lights out for the night.

But Mr. Barton does not depend entirely on this bedtime reading. His work makes a lot of traveling necessary. He always carries a liberal supply of reading matter with him on his journeys about the country. And, like Mr. Tily, Mr. Barton believes that a business man should aim to read trade publications during office hours. Keeping up with the progress of his industry should be as much a part of his daily routine as reading the mail or sending the deposit to the bank.

I called recently on one of the most noted manufacturers in the United States. On a corner of his desk were a pile of 15 or 16 current trade, business and technical publications. I asked him if he had time to read all of these papers.

"Oh, yes", he replied. "No day is so busy but what there are many idle moments in it. When I see a little breathing space ahead of me, I take up one of those publications and begin looking through it. In this way I manage to read 25 or 30 business periodicals each month. Of course I don't read everything in them, but I read enough to keep my idea tank pretty well filled."

TULSA, March 1.—The professional association of Wasson & Wasson has been discontinued. It is announced that Isabel Wasson, in private life Mrs. Theron Wasson, wife of the chief geologist of the Pure Oil Co., has resigned and will devote full time to the Wasson household and family. She has been office assistant to her husband for six years in general offices of the company, first at Columbus and later Chicago. Prior to her coming to the Pure Oil she was an instructor in geology at Columbia university. Mrs. Wasson is leaving for a Mediterranean cruise with her parents before settling down to run "tower" on her home.



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THREE MODERN REFINERIES:
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operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude

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Special Muleskin Folio

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WHEN you become an Authorized Opaline Dealer, you get the exclusive Opaline method for recommending motor oil. This method assures a motorist the right grade of *Opaline to seal the power in his pistons*—that's an *extra* service which Opaline does—that's an *extra* service you give your customers—an *extra* reason why they should keep coming back to you for gas and oil. May we tell you about this common-sense method of selling *precision* in lubrication?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

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Refinery - Tank Wagon Markets

National Petroleum News

Mid-Continent Gasolines and Kerosenes In Better Demand

Staff Special

TULSA, March 3

REFINED gasolines were in good demand in the Mid-Continent refinery area this week, both for domestic and export trades. Prices generally were unchanged from a week ago, although a few refiners announced late in the week slight advances on quotations for the week beginning March 5.

Considerable spot buying was done around March 1, but as far as could be learned very few sales were completed for shipment over the month. Sales reports gathered daily by Platt's Oilgram and NATIONAL PETROLEUM NEWS from Oklahoma refiners representing over 80 per cent of the crude capacity of the state selling on the spot market, shows a good increase in business for the week.

For comparative purposes the weeks of Feb. 18-24 and Feb. 25-March 2, inclusive are given. For the week of Feb. 18-24, spot sales of 58-60 U. S. Motor gasoline totaled 153 cars, and of 60-62, 437 e.p. gasoline 138 cars. For this week, Feb. 24-March 2, sales of 58-60 U. S. Motor totaled 374 cars, and of 60-62, 437 e.p. gasoline 166 cars.

These figures show an increase this week in 58-60 U. S. Motor sales of 144.4 per cent, and an increase for the 60-62, 437 e.p. grade of 20.3 per cent.

For the entire month of February these refiners reported a total of 984 cars of 58-60 U. S. Motor sold on the spot market, and 618 cars of 60-62, 437 e.p. gasoline. They have reported for the first two days of March a total of 201 cars of 58-60 U. S. Motor gasoline, or 20.4 per cent of the total in February, and 61 cars of 60-62, 437 e.p. gasoline or 9.9 per cent of their February sales.

Refiners in Texas report their business has been good the past week, while those in Louisiana and Arkansas say orders were better than expected. Kansas refiners reported a good volume of business.

A purchase of approximately 1,000,000 gallons of 64-66, 375 e.p. gasoline in Oklahoma for export shipment was reported early in the week. In Texas exporters most of the week were offering 6.625 cents a gallon for 64-66, 375 e.p. gasoline, but as far as could be checked only odd lots were picked up at this price, the total being around 75 or 80 cars.

Reports from Wichita Falls Saturday, however, indicated exporters were about convinced they could get no volume of goods at that price, and they had made tentative propositions to refiners at 6.75 cents for 64-66, 375 e.p. gasoline, and 6.50 cents a gallon for 64-66, 390 e.p. goods. If these prices should develop into firm offers the first of the week, it is likely some buying will develop, since it is generally known several refiners have been holding out for 6.75 cents on their 64-66, 375 e.p. gasoline for several days.

HIGH gravity gasolines were not as active, although refiners making these grades reported their orders were holding up as well as could be expected as the season for high gravity, low end point gasolines draws slowly to a close.

Natural gasolines lost considerable ground when no heavy buying developed around the first of the month. A few manufacturers held their goods as long as possible this week thinking that sizable orders would appear soon, until they were forced almost to push their goods on the market in order to get relief.

Grade AA prices during the week dropped .375 to .50 per cent a gallon, while price of grade BB moved down .125 to .25 cent and grade C was off .25 cent.

Kerosene demand was improved in most quarters although the peak of the usual spring demand is not expected for another three to six weeks. Price of 41-43 w.w. kerosene today was pegged at 4.25 cents to the trade. Virtually all refiners in Oklahoma were selling and quoting at this price, although earlier in the week small quantities of goods were sold at 4.125 cents a gallon.

Very little 42-44 w.w. kerosene is being made in Oklahoma, and buyers late in the week reported some difficulty in finding goods for spot shipment. The prevailing price was 4.625 cents. One large refiner was quoting 4.75 cents for his 42-44 kerosene, and said he had found business only fair so far at that price.

Shipments of kerosene have more than kept pace with production the past four weeks, a situation which was by no means the same for the corresponding period last year. For the period of Feb. 4 to 25 inclusive, 1927, production of kerosene by refiners reporting weekly operations to this magazine and representing approximately 60 per cent of the refining capacity in the Mid-Continent, totaled 25,050,270 gallons. For the period of Feb. 3 to 24 inclusive, this year, production has been 25,785,000 gallons, an increase of 734,730 gallons over last year.

Shipments for the period in 1927 totaled 22,821,394 gallons, whereas shipments for the period this year have totaled 26,963,000 gallons, an increase this year of 4,141,606 gallons. Stocks on hand as of Feb. 25, 1927 totaled 15,052,000 gallons, as compared with stocks on hand Feb. 24, 1928 totaling 12,761,000 gallons. In view of these figures it may be possible that spring demand already has arrived but without the rapid price advances and clamoring for goods which have characterized the demand in past years.

DISTILLATE prices have been comparatively steady in Oklahoma although demand has naturally slowed up during the week. Bulk of shipments continued to be on contracts, and little spot buying in more than one and two car lots was reported. Prices in Texas have moved down slightly with demand reported slow.

Gas oils also have been steady throughout the week in most quarters. In Texas prices have moved up approximately .125 cent. Louisiana and Arkansas refiners report their gas oil demand has been fair. The rice

(*Continued on Page* 125)

SIMMS GAS

According to Dr. Cross

of the Kansas City Testing Laboratories—

"SIMMS SMACKOVER ANTI-KNOCK GASOLINES *have a* BENZOL *Equivalent in* EXCESS *of* 50 *Per Cent and compare most favorably with the highly advertised BENZOL BLENDS, and TETRA-ETHYL Lead Treated Gasolines on the Market!"*

A TRIAL CAR IS THE MOST Convincing Evidence

SIMMS OIL COMPANY

Producers-Refiners-Marketers

General Offices: DALLAS, TEXAS

Refineries
DALLAS
SMACKOVER

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Mar. 5	Prices Feb. 27	Prices Feb. 20
52-54 Naphtha	7.375– 8.25	7.75 – 8.00	7.75 – 8.00
54-56 Naphtha	7.75 – 8.25	7.75 – 8.00	7.75 – 8.00
58-60 U.S. Motor 437 e.p.	8.00 – 8.25	7.75 – 8.00	7.50 – 8.00
60-62 400-410 e.p. gasoline	8.75 – 9.50	8.25 – 9.00	8.25 – 9.00
64-66 390 e.p. gasoline	9.125– 9.75	9.00 – 9.50	9.00 – 9.50
68-70 Str.-run gas. 350-360 e.p.	10.25 –10.875	10.00 –10.50	10.00 –10.50
OKLAHOMA			
48-50 450 e.p. naphtha	†5.50 – 5.75	†5.50	†5.50
50-52 450 e.p. naphtha	†5.50 – 5.75	†5.50	†5.50
56-58 450 e.p. gasoline	**5.75	**5.75	**5.75
58-60 450 e.p. gasoline	**5.75 – 6.00	**5.75 – 6.00	**5.75 – 6.00
64-66 390 e.p. gasoline	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
68-70 350-360 e.p. gasoline	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
OKLAHOMA (Weighted Average Prices)			
58-60 U. S. Motor, 437 e.p.	6.2039	6.1747	6.1440
60-62 437 e.p. gasoline	6.4671	6.5517	6.5080
60-62 400 e.p. gasoline	6.6250	6.7045	6.6500
64-66 375 e.p. gasoline	7.1250	7.1041	7.0417

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 37 of this issue. The two previous week's prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	6.375– 6.50	6.375– 6.50	6.25 – 6.375
60-62 400 e.p. gasoline	6.75	6.75	6.75
64-66 375 e.p. gasoline	7.375	7.375	7.375
NORTH TEXAS			
48-52 450 e.p. naphtha	†5.50 – 5.75	†5.50 – 5.75	†5.50 – 5.75
56-58 450 e.p. gasoline	†5.75	†5.75	†5.75
58-60 450 e.p. gasoline	†5.75 – 5.875	†5.75 – 5.875	†5.75 – 5.875
58-60 U.S. Motor 437 e.p.	†6.00 – 6.25	†6.00 – 6.25	†6.00 – 6.25
60-62 400 e.p. gasoline	6.25 – 6.375	6.25 – 6.375	6.25 – 6.375
64-66 390 e.p. gasoline	6.375– 6.50	6.375– 6.50	6.375– 6.50
64-66 375 e.p. gasoline	6.75	6.75	6.75
68-70 350-360 e.p. gasoline	7.125– 7.25	7.125– 7.25	7.125– 7.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	6.50	6.375– 6.50	6.375– 6.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	6.25	6.25	6.25
58-60 450 e.p. gasoline	6.25	6.25	6.25
58-60 U.S. Motor 437 e.p.	6.50	6.50	6.50
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	7.50 – 8.50	7.50 – 8.50	7.00 – 8.50
*58-60 U.S. Motor 437 e.p.	8.25 –10.00	8.25 –10.00	8.00 – 9.50
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*2c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Since Oct. 1, 1927 all naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	†5.00 – 5.125	†5.50	†5.50 – 5.75
Grade A, 72-79.9, 90% Recovery	†5.25 – 5.375	†5.50 – 5.625	†5.50 – 5.75
Grade BB, 84-92, 85% Recovery	†4.125– 4.25	†4.25 – 4.50	†4.625
Grade B, 76-83.9, 85% Recovery	†4.25 – 4.375	†4.50	†4.75
Grade C, 80-90, 78% Recovery	†4.00	†4.25	†4.25 – 4.50
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	†5.25 – 5.375	†5.50 – 5.625	†5.50 – 5.75
Grade A, 72-79.9, 90% Recovery	†5.25 – 5.375	†5.50 – 5.625	†5.50 – 5.75
Grade BB, 84-92, 85% Recovery	†4.25 – 4.375	†4.375– 4.625	†4.625
Grade B, 76-83.9, 85% Recovery	†4.375– 4.50	†4.375– 4.625	†4.75 – 4.875
Grade C, 80-90, 78% Recovery	†4.125– 4.25	†4.25	†4.375– 4.50
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†5.75	†5.75	†5.75 – 6.00
Grade BB	†4.75	†4.75 – 5.00	†5.00 – 5.25
Grade C	†4.50 – 4.625	†4.50 – 4.625	†4.75 – 5.00
CALIFORNIA			
75-85, 375-390 e.p. blend	8.00 – 8.50	8.00 – 8.50	7.50 – 8.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	†5.75 – 6.00	†5.75 – 6.00	†5.75 – 6.00

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.125– 6.50	6.25 – 6.50	6.25 – 6.50
46 w.w. kerosene	6.625– 6.75	6.50 – 6.75	6.50 – 6.75
47 w.w. kerosene	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
300 mineral seal	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
OKLAHOMA			
41-43 w.w. kerosene	4.25	4.125– 4.25	4.125– 4.25
42-44 w.w. kerosene	4.625	4.50 – 4.625	4.50 – 4.625
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
42-44 w.w. kerosene	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
NORTH TEXAS			
40-42 w.w. kerosene	†4.125	†4.125	†4.125
41-43 w.w. kerosene	†4.375	†4.375	†4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene	4.75	4.75 – 5.00	4.75 – 5.00
ARKANSAS (Arkansas destination only)			
42-44 kerosene	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

PENNSYLVANIA Vis.			
	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	33.00 –34.00	33.00 –34.00	33.00 –34.00
180 No. 3 Assoc. Filt.	30.00 –32.00	30.00 –32.00	30.00 – 32.00
150 No. 3 Assoc. Filt.	27.00 –27.50	27.00	27.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.50 – 8.00	7.25 – 7.75	7.25 – 7.75
36 Min. Neut. 300-305 Flash	6.50 – 7.50	6.50 – 7.00	6.50 – 7.00
OKLAHOMA Vis. Color	(Viscosity at 100°F.)		
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	8.50 –10.50	8.50 –10.50	8.50 –10.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL Vis. Color	(Viscosity at 100°F., pour test 0)		
100—No. 2 Unfilt. Pale	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
200—No. 3 Unfilt. Pale	9.25 –10.00	9.25 –10.00	9.25 –10.00
300—No. 3 Unfilt. Pale	10.25 –11.00	10.25 –11.00	10.25 –11.00
500—No. 3½ Unfilt. Pale	11.25 –12.00	11.25 –12.00	12.25 –13.00
750—No. 4 Unfilt. Pale	13.25 –14.00	13.25 –14.00	14.25 –15.00
200—No. 5½ Red Oil	7.25 – 8.00	7.25 – 8.00	7.25 – 8.00
300—No. 5½ Red Oil	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
500—No. 6 Red Oil	9.75 –10.50	9.75 –10.50	9.75 –10.50
750—No. 6 Red Oil	12.25 –13.00	12.25 –13.00	12.25 –13.00
CALIFORNIA Vis. Color	(Viscosity at 100°F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

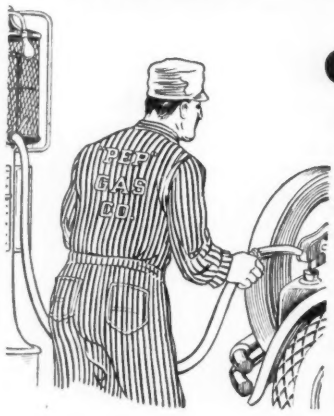
CYLINDER STOCKS

OKLAHOMA			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	22.00 –25.00	22.00 –25.00	22.00 –25.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.50 –10.00	8.50 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.75 – 8.00	6.75 – 8.00	6.75 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	9.00 –10.50	9.00 –10.50	9.00 –10.50
650 Steam Refined	11.25 –12.50	11.25 –12.25	11.25 –12.25
600 Flash	16.00 –16.50	16.00 –16.50	16.00 –16.50
625 Flash	25.50 –27.00	26.00 –27.00	26.00 –27.00
600 Warren E	15.50 –16.50	16.50 –17.00	16.50 –17.00
600 Oil City E	15.00 –15.50	15.00 –16.00	15.00 –16.00
600 D Filtered	22.50 –24.00	24.50 –25.50	24.50 –25.50
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210°, 540-550 flash, No. 8 color	27.00 –28.00	28.00 –30.00	28.00 –30.00
40-50 p.p., 140-150 vis. at 210, 540-550 flash, No. 6-6½ color diluted	25.00 –26.50	26.00 –28.00	26.00 –28.00
††Extra low cold test stock 15 p.p., 155-160 vis. at 210, 545 flash, No. 6½ color	.....	37.00	37.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

That impression of efficiency



When motorists drive up to your filling station are they served by neat appearing attendants?

Add to your service that one touch that makes it complete. Have your men uniformed — "Well dressed for work."

Standard Work Garments are made of the finest materials — triple stitched and reinforced — made to look right and wear right.

Standard Work Garments

$3.25 each

15% off in dozen lots. Special Prices in larger quantities.

Choice of blue denim, white, hickory stripe, express stripe, fancy blue and gold stripe. Union Made. Name or trade-mark embroidered in fast colors for 25c per garment.

The Standard Garment Co.

Toledo, Ohio

Guaranteed 100% PURE PENNSYLVANIA OIL

Finest Grades of

100% Pure Pennsylvania Products

GASOLINE
KEROSENE
FUEL OIL
NEUTRALS
BRIGHT STOCKS
MOTOR OILS

Our 30 years of experience is our guarantee to you of the finest and best products that can be produced.

Let us quote on your requirements.

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Superior Oil Works

Warren, Penna.

REPUTATION GUARANTEE SATISFACTION

On good roads or bad roads, loaded or light, Brown tanks will remain tight. No secret reinforcements nor mysterious highsounding features. Just good honest full weight material correctly built by real tradesmen. The Brown Certified Truck Tank is the result of practical oil men's experience. From the oil man's standpoint, we offer just what you expect—efficient service—oil-tight at all times—and attractive appearance—priced right. Get our figures and compare the facts.

A 1650 gallon with stake barrel carriers and underslung canboxes

BROWN SHEET IRON & STEEL CO. **ST. PAUL, MINN.**

Tear out this Coupon and mail it today

Make of Truck..... **Size Tank Required**.....

Other equipment on which you may send prices.....

Name..... **Address**.....

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Mar. 5	Prices Feb. 27	Prices Feb. 20
Per Pound, New York			
122-124 white crude scale	3.125– 3.25	3.125– 3.25	3.125– 3.25
124-126 white crude scale	3.25	3.125– 3.25	3.125– 3.25
****OKLAHOMA**			
124-126 White Crude Scale	2.875– 3.25	3.125– 3.25	3.125– 3.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
30-34 fuel oil	5.00 – 5.125	4.875– 5.125	4.875– 5.125
28-32 fuel oil	5.00 – 5.125	4.875– 5.125	4.875– 5.125
OKLAHOMA			
38-40 straw distillate	3.00 – 3.25	3.00 – 3.375	3.00 – 3.375
36-38 straw distillate	3.00	3.00 – 3.125	3.00 – 3.125
32-36 gas oil, straw	†2.50 – 2.625	†2.50 – 2.625	†2.625– 2.75
32-36 dark gas oil	2.50	2.50	2.50
28-30 fuel oil (in bbls.)	$0.95 – 1.00	$0.95 – 1.00	$0.925– 0.975
26-28 fuel oil (in bbls.)	$0.90 – 0.925	$0.90 – 0.925	$0.90
24-26 fuel oil (in bbls.)	**$0.85	**$0.875	**$0.875
22-26 fuel oil (in bbls.)	**$0.825– 0.85	**$0.85– 0.875	**$0.85 –0.875
18-22 fuel oil (in bbls.)	**$0.80– 0.825	**$0.80– 0.825	**$0.80 –0.825
16-18 fuel oil (in bbls.)	**$0.75– 0.775	**$0.75– 0.775	**$0.75 –0.775
14-16 fuel oil (in bbls.)	**$0.75– 0.775	**$0.75– 0.775	**$0.75 –0.775

Note: Zero cold test low flash gas oils sell for ¼ cent more per gallon. Zero cold test fuel oils sell for 5 to 15 cents more per bbl.

KANSAS *(F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50	3.50	3.50 – 3.75
36-38 straw distillate	3.25	3.25	3.25
32-36 gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil	*$0.90– 1.00	$0.90 – 1.00	*$0.90– 1.00
18-22 fuel oil	*$0.85	*$0.85	*$0.85
NORTH TEXAS			
38-40 straw distillate	3.125– 3.25	3.25 – 3.375	3.25 – 3.375
32-36 gas oil, cracked	2.375– 2.50	2.25 – 2.375	2.25 – 2.375
32-36 gas oil, uncracked	2.375– 2.50	2.25 – 2.375	2.25 – 2.375
24-26 fuel oil (in bbls.)	$0.75 – 0.80	$0.725– 0.75	$0.725– 0.75

GULF COASTAL	Prices Mar. 5	Prices Feb. 27	Prices Feb. 20
Fuel (in bbls.)	$1.40 –$1.50	$1.40 –$1.50	$1.40 –$1.50
Gas oil	4.375– 4.50	4.375– 4.50	4.375– 4.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	3.00	3.00 – 3.125	3.00 – 3.125
32-36 gas oil, straw	3.125	3.125– 3.25	3.125– 3.25
16-20 fuel oil (in bbls.)	$1.00	$1.00	$1.00
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
32-36 gas oil	3.00	3.00	3.00
28-32 gas oil	2.75	2.75	2.75
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.60 –$0.75	$0.60 –$0.75	$0.60 –$0.75
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In cents per pound in tank cars; in barrels, in car lots ¾c per pound more.)			
Snow White	8.875	8.875	8.875
Lily White	7.875	7.875	7.875
Cream White	6.875	6.875	6.875
Light Amber	3.875	3.875	3.875
Amber	3.50	3.50	3.50
Red	3.25	3.25	3.25
Green No. 5 color	2.625	2.625	2.625

**PETROLEUM COKE

OKLAHOMA (Per ton in car lots)			
Lump	$5	$5	$5
Still run	$3	$3	$3
Breeze	$2	$2	$2

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

(Continued from Page 121)

season is not far distant and one Arkansas refiner already is reported to be sold up on gas oil for March. The floods last year and the unusually heavy rains in the Spring gave the rice growers in that area more water than they needed without having to pump it, consequently the gas oil business in Arkansas was far below normal. Refiners are expected to show a better total care report this year.

Fuel oils were causing some uncertainty as the week closed. A few refiners have sold their March production at prices in line with the spot market, while others have either been holding their fuel oils for better prices or have moved considerable quantities on the spot market at present price levels.

Late in the week, stiff competition developed from other areas and a few grades accordingly were reduced in Oklahoma today. A majority of refiners in Oklahoma had been getting 85 to 87.5 cents a barrel for 24-26 gravity fuel oil, but the competition developed prices as low as 80 cents a barrel for over March.

A wide range of quotations continued to exist on 150-160 vis. bright stock, but indications were the stiff competition which has existed in Oklahoma the past several weeks has about run its course, and prices are more stabilized. Prices ranged from 22 to 24.5 cents a gallon. Oklahoma neutral oils and cylinder stocks were generally unchanged.

Price of 124-126 white crude scale wax was off fractionally. Quotations were from 2.875 to 3.25 cents a pound. One refiner reported two carloads sold this week at 3.25 cents, while a large buyer reported purchases early in the week at 3 cents a pound.

SHREVEPORT, March 3.—Fire caused while workmen were cleaning a tank car damaged an agitator and destroyed a crude oil storage tank at the Gas Center plant of the Louisiana Oil Refining Corp. on Saturday, Feb. 25. No workmen were injured. The damage was estimated at $50,000. The plant was held up on shipments about 36 hours.

Correction

Through typographical error in the price of 150 No. 3 color Oklahoma neutral oil in the refinery table on page 131 of the Feb. 29 issue of NATIONAL PETROLEUM NEWS, price was published as 8.00 to 8.60 cents, in column dated Feb. 27. Price on Feb. 27 was 8.00 to 8.50 cents.

Also, in Gulf export markets, price of 64-66, 375 e. p. gasoline should have been 8.125 to 8.25 cents, instead of 8.125 to 8.375 cents.

Export Lubes More Active

NEW YORK, March 3.—Export lubricating oil markets were more active this week, although prices in the New York market failed to advance with prices in the field.

There was a heavy demand for 600 steam refined Pennsylvania cylinder stock for bright stocks.

Western bright stock, 150 vis. at 210, was reported freely available at 22 cents, but 195-200 vis. at 210 stock was scarce. Western neutrals also were in better position, according to export buyers.

South Texas oils, except 500 red, which was 0.5-cent higher at 9.50 to 10 cents, were unchanged this week, although it was said 100 pale was harder to find at less than 6 cents.

Wax Markets Are Quiet

NEW YORK, March 3.—Wax markets were inactive this week. Prices were generally unchanged. Approximately 200 tons of white crude scale were sold at 3.125 to 3.25 cents a pound in the New Orleans market. Most New York trading was among brokers. A few purchases were by United Kingdom buyers.

White crude scale at New York was offered at 3.125 to 3.25 cents a pound. Brokers late in the week were bidding 3.10 cents.

Gasoline Moving Good at Chicago; Kerosene Demand Improving

Staff Special
CHICAGO, March 3

GASOLINES enjoyed good demand on both contract and spot movement in the Chicago market this week. Several refiners reported more business on U. S. Motor gasoline this week than last. Advances in the tank wagon prices of gasoline at several points in Standard Oil Co. of Indiana territory that were below normal, helped to uphold the tone as did favorable motoring weather throughout the territory. Several refiners advanced their quotations 0.125-cent. Sinclair Refining Co. advanced its quotation on 58-60 U. S. Motor gasoline from 6.50 to 6.75 cents Thursday.

Demand for 58-60 U. S. Motor was better than demand for light gasoline, traders said. One refiner reported he moved about nine cars of Motor to every car of high test. Sales of U. S. Motor were at 6.125 to 6.25 cents all week, and most sellers were getting 6.25 cents Saturday.

The higher gravity gasolines were in steady demand at generally unchanged prices. The 60-62, 437 e. p. grade moved at 6.125 to 6.25 cents until Saturday, when sales at 6.375 cents became more numerous. Gasoline, 60-62, 400 e. p., was 6.50 to 6.625 cents all week. The 64-66, 375 e. p. grade continued to sell mostly at 7 cents, with some sales reported both above and below this figure.

Several sellers reported larger demand for kerosene. Jobbers were inquiring more for kerosene than for some time and several purchased goods for spring trade. Most sales of 41-43 w. w. were made at 4.25 cents.

Demand for distillate was quiet and prices sagged slightly below the levels that have prevailed for several months. The 38-40 straw distillate was 3.25 to 3.375 cents Monday and moved thereafter at 3.125 to 3.375 cents.

Gas oils went generally unchanged in price and demand, although ordinary 32-36 dark was fractionally lower at the end of the week at 2.50 to 2.625 cents. Earlier it moved at 2.50 to 2.75 cents. Gas oil of like gravity but zero cold test continued to sell mostly at 2.875 to 3 cents. The 32-36 straw zero gas oil sold all week at 3 to 3.25 cents.

Conflicting reports were heard about fuel oils, but the market is said to have overcome in part the stringency of the last two weeks. A few sellers reported goods were easier to obtain but others indicated they had not found any soft spots in the market. Prices, however, showed little signs of decline and were generally unchanged from those prevailing last week. Both marketers and refiners reported industrial concerns had bought large quantities of fuel oil for March delivery and this was expected to have considerable influence in keeping prices about in line with the present market.

Fuel oil of 28-30 gravity moved all week at $1.00 to $1.10. Both the 24-26 and 22-26 fuel oil continued to sell mostly at $0.85 to $0.925. The 18-22 grade moved at $0.825 to $0.925 (depending on the cold test) during the fore part of the week, and at $0.825 to $0.90 after Thursday, as the spread between the ordinary and the zero cold test narrowed.

Smackover treated fuel oil prices varied widely all week and were approximately 5 cents lower Saturday. Sales and quotations were reported at $0.95 to $0.975 Monday and Tuesday; $0.90 to $0.975 Wednesday, and at $0.90 to $0.95 the rest of the week.

Pennsylvania and Ohio market reports will be found on page 134.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New York—T. w. and s. s. prices gasoline advanced 2 cents, Buffalo, Albany and Rochester, and s. s. price only 2 cents. Syracuse, **Feb. 29.** This advance brought t. w. prices to 15 cents at all points.

S. s. price only, of gasoline advanced 1 cent, New York City, to 19 cents, **Feb. 28.** S. s. price has been in error in the tank wagon table since Dec. 1, 1927, on which date s. s. price was cut 3 cents, to 18 cents.

S. s. price gasoline advanced 2 cents, Boston, to 17 cents, **Feb. 29.** T. w. unchanged at 17 cents.

S. s. prices only of gasoline advanced 1 cent, Massachusetts, Maine, and New Hampshire, March 5. This brings s. s. price at Boston to 18 cents; at Augusta to 23 cents; and at Manchester to 22 cents.

Atlantic Refining—T. w. and s. s. prices gasoline advanced from 1 to 2 cents, Massachusetts and Rhode Island, **Feb. 28.** Springfield was advanced 1 cent, and Worcester, Boston and Providence 2 cents. T. w. price, exclusive of tax, is now 17 cents at those four points.

The reduction at Hartford reported on page 134 of the Feb. 9 issue of NATIONAL PETROLEUM NEWS, was 2 cents, instead of 3 cents, bringing new prices to 20 cents, rather than 21 cents. Prices are corrected in the tank wagon table of this issue.

Standard of Indiana—T. w. price gasoline advanced 1 cent, s. s. price 2 cents, Minneapolis and St. Paul, making t. w. price 16 cents and s. s. 18 cents at both points, including 3-cent state tax, **Feb. 29.**

T. w. price gasoline advanced 2 cents, s. s. 3 cents, Indianapolis to 17.2 cents and 19.2 cents respectively, including 3-cent state tax, **March 1.**

S. s. price only of gasoline advanced 2 cents, South Bend, to 19.4 cents, including tax, **March 1.** T. w. unchanged at 17.4 cents.

Several other Indiana towns where prices were below normal were advanced on March 1 the required amount to bring gasoline prices up to normal.

Magnolia Petroleum—Tulsa gasoline prices in the tank wagon table on page 135 of the Feb. 29 issue of NATIONAL PETROLEUM NEWS should have been 16 cents t. w. and 17 cents s. s., including 3 cent state tax, instead of 15 cents and 16 cents respectively. Tulsa prices were advanced 1 cent on Feb. 27 along with the rest of Oklahoma, although prices at that point had been advanced 2 cents on Feb. 24.

(*Continued on page* 130)

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(As posted by principal marketing companies)

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect March 5, 1928

S.O. NEW JERSEY TERRITORY

	Gasoline			Oil
		Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	12
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	23.5	12
Richmond, Va.	14	4½	18.5	21.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	14	4	18	21	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	20	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

Note: Above gasoline and oil prices in N. Carolina include ¼c per gal. inspection fee and in S. Carolina ½c.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	17	0	17	19	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	15	0	15	18	12
Syracuse, N. Y.	15	0	15	17	15
Boston, Mass.	17	0	17	18	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	17	4	21	22	15
Burlington, Vt.	17	3	20	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 3c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	13
Philadelphia, Pa.	15	*	15	*21	13
Allentown, Pa.	16	*	16	*22	13
Erie, Pa.	12	*	12	*18	13
Scranton, Pa.	16	*	16	*22	13
Altoona, Pa.	16	*	16	*22	13
Dover, Del.	16	3	19	22	13
Wilmington, Del.	16	3	19	22	12
Providence, R. I.	17	2	19	19	15
Boston, Mass.	17	0	17	17	15
Springfield, Mass.	17	0	17	17	15
Worcester, Mass.	17	0	17	17	15
Hartford, Conn.	18	2	20	20	14
New Haven, Conn.	18	2	20	20	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	13	5	18	21	15
Covington, Ky.	14	5	19	22	15.5
Carksdale, Miss.	13	4	17	20	11.5
Gulfport, Miss.	††14.5	4	††18.5	21.5	14
Jackson, Miss.	13	4	17	20	12
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.‡	13	4	17	18	14.5
Mobile, Ala.‡	14	4	18	21	14
Montgomery, Ala.*‡	9	4	13	16	15.5
Atlanta, Ga.	14	4	18	21	†16.5
Augusta, Ga.	14	4	18	20	†16.5
Macon, Ga.	15	4	19	19	†16 5
Savannah, Ga.	13	4	17	19	†14.5
Jacksonville, Fla.°	12	5	17	18	13.5
Miami, Fla.°	14	5	19	20	14.5
Tampa, Fla.°	13	5	18	21	13
Pensacola, Fla.°	**14	5	**19	22	13

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

‡Alabama gasoline prices include 1/40 of 1c inspection fee. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13 1	15 55	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14 2	0	14.2	16.2	12.1
Quincy, Ill.	14 2	0	14.2	16 2	11.9
Indianapolis, Ind.	14 2	3	17 2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19 4	13.4
Detroit, Mich.	14 8	3	17 8	19 8	13.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	14	2	16	18	12.9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	12.1	2	14.1	16.1	12.7
Des Moines, Ia.	12.9	3	15.9	17.9	12.3
Davenport, Ia.	12.5	3	15.5	17.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†12.9	2	14.9	16.9	10.6
St. Joseph, Mo.	†12.5	2	14.5	16.5	11.2
Fargo, N. D.	13	2	15	17	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	15.5	4	19.5	21.5	13.9
Wichita, Kans.	12.8	2	14.8	16 8	10.8
Bartlesville, Okla.	12.5	3	15.5	17 5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, above discounts apply, except that minimum required quantity to get the 1c discount is 100 gals., instead of 50 gals. This 1c discount applies on quantities of 100 gals. and over, in addition to regular Q.D.A. discounts applying thru rest of territory, as stated above.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	17.25	12.25
McCook	12.75	2	14.75	16.75	11.50
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	18.5	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	13	3	16	18	14.5
Pueblo, Colo.	13	3	16	18	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19.5	3	22.5	22.5	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	16.5	3½	20	21	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA*

Phoenix, Ariz.	19	4	23	27	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

S. O. LOUISIANA

Little Rock, Ark.	11	5	16	16	11
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	13.5	2	*15.5	*18.5	†14
Shreveport, La.	13.5	2	15.5	18.5	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	15	3	18	21	15
Memphis, Tenn.	14	3	17	18.5	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline			Oil
		Total		
	T.W.	Tax	T.W.	S.S.	T.W
All Ohio points	14	3	17	19	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	11	3	14	17	11
Oklahoma City	11	3	14	15	11
Tulsa, Okla.	13	3	16	17	11
Fort Smith, Ark.*	14	*3	17	18	10
Little Rock, Ark.	14	5	19	19	11
Texarkana, Ark. *	13	*3	16	19	12
Dallas, Tex.	10	3	13	17	11
Fort Worth, Tex.	11	3	14	17	11
Houston, Tex.	10	3	13	17	15
San Antonio, Tex.	11	3	14	17	10
El Paso, Tex.	12	3	15	19	10

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	

Note: Above prices on Oleum Spirits and V. M. & P. Naphthas went into effect January 3, 1928.

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	24.5	3	27.5	31	23.5

MANITOBA

Winnipeg	24.5	3	27.5	31	23.5

SASKATCHEWAN

Regina	27.5	0	27.5	32	26.5

ALBERTA

Edmonton	26.5	3	29.5	33	25.5
Calgary	22.5	3	25.5	29	23.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	22

QUEBEC

Montreal	20.5	3	23.5	27	21
Quebec City	22.5	3	25.5	31	23
Three Rivers	22.5	3	25.5	29	23

NEW BRUNSWICK

St. John	24.5	3	27.5	32	24
Moncton	24.5	3	27.5	32	24

NOVA SCOTIA

Halifax	24.5	3	27.5	32	24
Sydney	24.5	3	27.5	32	24

PRINCE EDWARD ISLAND

Charlottetown	24.5	3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

East Coast Gasoline Prices Rise With Tank Wagon Postings

Staff Special
NEW YORK, March 3

ADVANCING tank wagon markets together with increase of 0.25 to 0.5 cent in tank car prices for gasoline generally along the Atlantic seaboard brought considerable optimism to eastern domestic markets this week.

The upward trend in tank car prices, which got under way after the advance in tank wagon markets in New England and New York state, was apparent along the seaboard from Maine to Florida. Business was a bit slow, immediately after the advances, but this was due largely to the fact that a good many jobbers anticipating slightly higher prices had covered on their March requirements to some extent late in February.

Retail prices in Boston, Albany, Rochester, Syracuse and Buffalo, cities which have been virtually "hoodoos" to the marketing companies for many months, were advanced from 1 to 2 cents a gallon. The practice of making concessions under posted tank wagon prices, which have amounted to as much as 7 cents in some cities, was abolished according to authoritative reports.

Several weeks ago most seaboard refiners felt New England tank car prices were too low in relation to the general tank car price structure along the seaboard. Prices were advanced about 1 cent a gallon. For two weeks, it was generally admitted by sellers that little business was being done at the new levels inasmuch as the jobbing trade had been accustomed for some time to think in terms of much lower prices, and were going to use all the gasoline they had in storage before buying more.

This week brought a different tone to the market. Upward revisions in retail markets, and the subsequent advances in tank car prices in other seaboard markets, were evidence of the market's having turned the corner, and jobbers were less reluctant about paying the new prices. A period of active spot demand followed. Sellers in the Boston district were asking 9 to 9.25 cents for U. S. Motor gasoline, f.o.b. refinery or terminal with a minimum of 10 cents a gallon, delivered in Boston. In the Providence district there remained a 0.5-cent spread for U. S. Motor, most sellers quoting 8.75 to 9.25 cents depending upon destination.

Ordinary U. S. Motor gasoline was available in New York harbor at 8 cents a gallon early in the week. An offer of 25 cars of California U. S. Motor at the same price also was made known. Prices at Baltimore and Philadelphia stood at last week's levels. March 1, most major refiners in the Bayonne district advanced their prices for ordinary U. S. Motor and California gasolines 0.5-cent a gallon. Several companies lagged behind, but only for a day or two and by the end of the week it was doubtful if a quotation of less than 8.50 cents could be obtained for either grade.

At the close of business today, the ordinary grade of U. S. Motor gasoline was quoted at 8.25 to 8.50 cents at Baltimore and 8.50 cents flat at Philadelphia. California goods were held at a minimum of 8.75 cents, Baltimore.

Kerosene continued in more or less routine demand at around 7 cents a gallon in northern seaboard markets. At Philadelphia water white goods was available at 6.75 cents and a minimum of 7.25 cents was quoted at Baltimore.

Sale of Two Gasoline Cargoes Improves Gulf Market Outlook

Staff Special
NEW YORK, March 3

GULF export markets were lifted out of the rut in which they spent most of February late this week. A renewal of active interest of French buyers which resulted in a purchase of one cargo of gasoline, the scheduling of a second cargo to be closed early next week, a sale of a cargo of gasoline for deferred shipment, together with persistent reports that prices for gasoline posted by one of the major export suppliers would be advanced early next week, reversed the feelings of most suppliers who have been pessimistic recently.

Persistent reports were circulated among the trade late in the week that prices for light Mid-Continent crude oils also would be increased in the near future. This also tended to brighten the spirits of many an oil man who had been sort of down-in-the-mouth of late.

Charter reports lately have shown a large volume of oil moving out of the Black Sea district to French and English companies. This accounts for the inactivity of these companies in Gulf markets, according to several suppliers. A recent report showed three ships chartered for Black Sea as against one for the Gulf. However, it was felt that with the coming of spring, foreign buyers would have to look to the United States for more of their requirements.

Prices for the cargo sold this week disappointed the trade generally. The cargo was for 63,000 barrels of U. S. Motor and 64-66, 375 end point gasoline which the buyer, a French company, succeeded in buying at 7 cents and 8.125 cents, respectively, for March 15-April 15 loading.

Most suppliers agreed that 7 cents was "about the market" for the U. S. Motor.

The fact that one of the most important export suppliers with refining facilities at the Gulf which has been quoting 8.125 cents for 64-66, 375 end point gasoline for several weeks, announced they were out of the market for March and possibly April gave rise to an upward tendency in "ideas" of prices for this grade. Suppliers buying in the field said 64-66 gasoline was costing them 8.25 cents, f. o. b. ship, and that they were willing to stand aside and let some one else sell at lower prices.

It became known a large French oil company had chartered the steamer Woensdrecht for April loading and the inquiry for approximately 50,000 barrels of 64-66, 375 end point gasoline, and water white and prime white kerosene which followed, was more or less expected. Specific quotations for this business had not been made Saturday but suppliers indicated they would quote 8.25 to 8.375 cents, 6.50 to 6.75 cents, and 5.50 to 5.75 cents, respectively.

The rest of gasoline activity this week consisted of a few part cargo sales and the sale of approximately 65,000 barrels of 61-63, 390 end point and 64-66, 375 end point gasoline at around current prices for deferred shipment.

A 65,000-barrel cargo of 32 plus translucent gas oil for April shipment from the Gulf to Europe was sold Monday at 4 cents a gallon. Gas oil, 26 plus, was available late this week at 3.875 cents and it was indicated in some quarters the same price might be done on the higher gravity grade.

Heavy oil prices were generally unchanged with Grade C for bunkering quoted at $1.10 to $1.15 a barrel and in cargoes, $0.95 a barrel, although it was indicated that $0.90 might again be done for cargoes with firm offer.

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f.o.b. refinery or seaboard terminal, represent majority of quotations and sales.)

	Mar. 5	Feb. 27	Feb. 20
U.S. Motor gasoline, New York harbor	8.50	8.00	8.00
U.S. Motor gasoline, Philadelphia	8.50	8.00 – 8.25	8.00 – 8.25
U.S. Motor gasoline, Boston district	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
U.S. Motor gasoline, Providence district	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
U.S. Motor gasoline, Baltimore	8.25 – 8.50	8.00 – 8.25	8.00 – 8.25
U.S. Motor gasoline, Norfolk	8.25 – 8.50	8.25	8.25
U.S. Motor gasoline, †Wilmington, N. C.	8.50	8.25	8.25
U.S. Motor gasoline, Charleston	8.00 – 8.25	8.00	8.00
U.S. Motor gasoline, Savannah	7.75 – 8.00	7.75 – 8.50	7.75
U.S. Motor gasoline, Jacksonville	7.75 – 8.00	7.75	7.50 – 7.75
California U.S Motor gasoline, †New York Harbor	8.50 – 8.75	8.25	8.25
California U.S. Motor gasoline, Baltimore	8.75	8.50	8.50
California U.S. Motor gasoline, Philadelphia	8.50	8.25	8.25
Water white kerosene, New York Harbor	7.00	7.00	7.00 – 7.50
Water white kerosene, Philadelphia	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Water white kerosene, Baltimore	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
28-34 gas oil, New York harbor	4.50 – 4.75	4.50 – 4.75	4.50 – 5.00
28-34 gas oil, Boston district	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
38-42 furnace oil, New York harbor	5.75	5.75	5.75
36-40 furnace oil, Boston district	5.50 – 5.75	5.25 – 5.75	5.50 – 5.75
Grade C bunker oil, New York harbor	$1.35	$1.35	$1.35
Grade C bunker oil, Boston district	$1.35	$1.35	$1.35
Diesel oil, New York harbor	$2.00	$2.00	$2.10

Note: Above prices do not include inspection tax levied in some states.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

†Only one refiner quoting.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Mar. 5	Feb. 27	Feb. 20
U. S. Motor gasoline	23.65	23.65	23.65
43-45, 150 w.w. kerosene	17.90	17.90	17.90
42-44, 110 s.w. kerosene	16.90	16.90	16.90
CYLINDER OILS			
Bright stock, dark	33.00 –34.50	33.00 –34.50	33.00 –34.50
600 D filtered	31.00	30.00 –31.00	30.00 –31.00
600 Warren E filtered	24.00 –25.00	23.50 –25.00	23.50 –25.00
600 s.r. unfiltered	16.25 –17.00	16.00 –17.00	16.00 –17.00
650 s.r. unfiltered	19.00 –19.50	18.75 –19.50	18.75 –19.50
600 flash s.r.	20.50 –21.00	20.50 –21.00	20.50 –21.00
630 flash, s.r.	33.00 –34.00	33.00 –34.00	33.00 –34.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.00	19.00	19.00
200 vis. No. 6 color	18.50	18.50	18.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¼ color	24.50	24.00	24.00
180 vis. No. 3¼ color	20.00	20.00	20.00
100 vis. No. 2¼ color	15.75	15.75	15.75
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	35.00	35.00	35.00
500 vis. No. 6½ color	33.00	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00	31.00
300 vis. No. 6 color	30.00	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)

	Mar. 5	Feb. 27	Feb. 20
122-124 A.m.p.	3.125– 3.25	3.125– 3.25	3.125– 3.25
124-126 A.m.p.	3.125– 3.25	3.125– 3.25	3.125– 3.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00	4.00	4.00
125-127 A.m.p.	4.00	4.00	4.00
128-130 A.m.p.	4.125– 4.25	4.125– 4.25	4.125– 4.25
130-132 A.m.p.	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
133-135 A.m.p.	*5.25 – 5.50	*5.25 – 5.50	*5.25 – 5.50
135-137 A.m.p.	*5.50 – 6.00	*5.50 – 6.00	*5.50 – 6.00
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.00	3.00	3.00

***Prices nominal.**

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary.)

GASOLINE	Mar. 5	Feb. 27	Feb. 20
U. S. Motor	7.00	7.00	7.00
60-62, 400 e.p.	7.75	7.75	7.75
61-63, 390 e.p.	8.00	8.875– 8.00	7.875– 8.00
64-66, 375 e.p.	†8.125– 8.25	8.125– 8.25	8.125– 8.375
U. S. Motor, cases (cargoes)	$1.60	$1.60	$1.60
64-66, cases (cargoes)	$1.75	$1.75	$1.75

***Nominal.**
†Quotation to inquiries only

KEROSENE			
44 water white	6.50 – 6.75	6.50 – 6.75	6.50
41-43 prime white	5.50 – 5.75	5.50 – 5.75	5.50
Water white, cases (cargoes)	$1.55	$1.55	$1.55
Prime white, cases (cargoes)	$1.45	$1.45	$1.45
DOMESTIC GAS & BUNKER OILS			
26-28 translucent gas oil	3.875– 4.00	4.00	4.00
30-32 translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$1.00 –$1.15	$1.00 –$1.15	$1.00 –$1.15
Grade C bunker oil, cargoes	$0.95	$0.95	$0.90 –$0.95
MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.05	$1.05	$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.20	$1.20	$1.20

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.; cold test 0) (Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00	5.50 – 6.00	5.50 – 6.00
200 vis. No. 3 unfiltered pale	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
300 vis. No. 3 unfiltered pale	8.875– 9.00	8.875– 9.00	8.875– 9.00
500 vis. No. 3 unfiltered pale	11.00 –11.25	11.00 –11.25	11.00 –11.25
200 vis. No. 5½ red oil	6.875– 7.00	6.875– 7.00	6.875– 7.00
300 vis. No. 5½ red oil	8.00 – 8.125	8.00 – 8.125	8.00 – 8.125
500 vis. No. 6 red oil	9.50 –10.00	9.00 – 9.50	9.00 – 9.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Mar. 5	Feb. 27	Feb. 20
Gasoline, U. S. Motor, 53-55 Gravity	6.125– 6.25	6.125– 6.25	6.25 – 6.75
Gasoline, U. S. Motor, blends and special cuts	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Gas Oil, 30-34, per barrel	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
Diesel Oil, 27 plus, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18, per barrel	$0.67 –$1.00	$0.67 –$1.00	$0.70 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.70 –$1.80	$1.70 –$1.80	$1.70 –$1.80
Kerosene, 38-40 w.w., 125-150 flash	$1.35 –$1.45	$1.35 –$1.45	$1.35 –$1.45

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)..... $2.80
Bradford District Oil in National Transit Lines (Bradford District)..... 2.80
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)..... 2.65
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)..... 2.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)..... 2.60
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)..... 2.35
Keister Grade in National Transit Lines (Butler Co)..... 1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)..... 1.35
Corning Grade in Buckeye Pipe Lines (Ohio)..... 1.55
Corning, O. heavy grade..... 1.45
*Somerset Oil in Cumberland Pipe Lines (Kentucky)..... 1.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)..... .95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines..... $1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76
40-40.9	1.40		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		

Mirando, Tex..... $1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30..... $0.75
30-30.9 ..... 0.90
31-31.9 ..... 1.05
Glasscock and Howard Counties..... $0.60
Chalkfield (Howard Co.)..... $0.80
Iatan district..... $0.93
Corsicana heavy..... $1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:

Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40.9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		

Wheeler County:

Below 29	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		

Gray County:

Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties... $0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto.

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0.96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

*Smackover, below 24..... $0.75
* do 24 and above..... .90
Bellevue..... 1.25
Cotton Valley..... .75
**Urania, La..... .75
†East El Dorado..... 1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6, by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

California Export Market Better Maintained

LOS ANGELES, March 3.—More companies refused to quote export gasoline under 6.25 cents, but the range continues at 6.125 to 6.25 cents because some gasoline can still be bought at 6.125 cents. Rumors are current that one or two companies would be willing to sell at 6 cents for prompt movement, to relieve their tankage. Increased retail prices early this week in the East and Middle West has helped to make some of the sales managers firm in their quotations.

The retail gasoline situation in southern California is bad. Gasoline can be bought at 15.50 to 20.50 cents from Independent service stations in Los Angeles.

The ruling price for gasoline in tank cars in the general Pacific Coast trade territory ranges 7.50 to 8.50 cents, although in a few instances, gasoline has moved to points outside of the state at 7 cents. One company that has been shipping to Utah at prices ranging from 6.50 to 7 cents net at the refinery, has boosted its price to 7.50 cents.

Natural gasoline is 8 to 8.50 cents a gallon, spot, with contracts being made at 7.50 cents, net.

Week's Price Changes—Tank Wagon Markets

(*Continued from Page* 126)

T. w. and s. s. prices gasoline advanced 2 cents, Little Rock, both to 19 cents, including 5 cent state tax, **Feb. 28.** Prices at Little Rock had been advanced 1 cent on Feb. 27.

T. w. price gasoline advanced 1 cent, s.s. price 2 cents, San Antonio, to 14 cents and 17 cents respectively, **March 1.**

T. w. price gasoline advanced 1 cent, s. s. price 4 cents, El Paso, to 15 cents and 19 cents respectively, **March 1.**

T. w. price gasoline advanced 1 cent, s. s. price 2 cents, Dallas, to 13 cents and 17 cents respectively, **March 2.**

S. s. price only, of gasoline advanced 1 cent, Fort Worth, to 17 cents, **March 2.**

S. s. price only, of gasoline advanced 2 cents, Houston, to 17 cents, **March 4.**

All above prices at Texas points include 3 cent state tax.

Purchasers, in All Fields (in Effect March 5)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.30
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.50
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

	Mar. 5	Feb. 27
Refiners' Supplies		
Soda Ash light 58% bags, cwt.	$1.325	$1.325
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.80-0.95	$0.80-0.95
Sal Soda wks	$0.90-1.10	$0.90-1.10
Caustic Soda 75% solid, cwt.	$3.66	$3.66
Chloride of Lime, cwt., wks.	$2.00	$2.00
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks, lb.	3.50-3.75	3.50-3.75
Litharge, powdered, casks, cwt.	$8.50	$8.75
Compounders' Supplies		
Vegetable Oils		
Linseed carloads, spot, lb.	9.80	9.80
Tanks, spot	9.00	9.00
Soya Bean, Tanks, coast, lb.	9.50	9.75
Oleic Acid		
Distilled, tanks, lb.	9.00	9.00
Distilled, bbls, lb.	9.75	9.75
Saponified, tanks, lb.	9.25	9.25
Saponified, bbls, lb.	10.00	10.00
Lard Oils		
Prime Winter Strained, lb.	15.25	15.50
Extra Winter Strained, lb.	12.75	12.875
Extra, lb.	12.25	12.375
Extra No. 1, lb.	11.75	11.75
No. 1, lb.	11.25	11.25
No. 2, lb.	10.75	10.75
Tallow oil, lb.	11.375	11.375
Neatsfoot Oil		
Pure, bbls, lb.	15.75	15.50
Extra, bbls, lb.	12.00	12.00
No. 1, bbls, lb.	11.50	11.50
Cold Pressed, lb.	18.50	18.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	60-62	60-62
Light Pressed, tank cars, N. Y., gal.	52	52
White, gal.	65-66	66
Yellow bleached, gal.	63-64	63
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	55	55
Steam distilled turpentine, Savannah, gal.	50	50
Gum turpentine, N. Y., gal.	61	60
Gum turpentine, f.o.b. cars Savannah, gal.	57	56
Wood Rosin F, N. Y., bbl.	$8.30	$7.80
Wood Rosin F, Savn'h, bbl.	$7.70	$7.00
Gum Rosin B, N. Y., bbl.	$8.45	$8.45
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.75	$7.70
Rosin oil, pure, gal.	55	55
Rosin oil, compounded, gal.	47	47
Pine Tar		
Kiln burnt, bbl.	*$13.00	*$13.00
Retort, bbl.	$16.00	$16.00
Alcohol		
Denatured, Formula 5, in bbls., per gal.	55-56	55-56

*Nominal.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 3 Sales	First	High	Low	Last	Change
37⅞	27⅜	32⅜	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Jan. 31, 28	8,900	29¾	31	29¾	30½	+ ⅝
82½	35⅛	76⅛	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	31,000	64½	65¼	60½	61½	+ ½
50¼	35	41¾	37½	$56.000.000	$ 25	Associated Oil	50cQ	Dec. 24, 27	110	39⅜	39½	38	39	0
131⅜	104	109⅞	95¾	50.000.000	100	Atlantic Refining	$1Q	Dec. 15, 27	6,300	101	103⅝	101	103	+ 3
119	115½	118¼	116	20,000,000	100	do pfd	$1.75Q	Feb. 1, 28	.....	.....	.....	.....	.....	.....
35½	20¾	26½	22⅛	28,558.150	25	Barnsdall Corp. A	s62½cQ	Feb. 6, 28	15,500	23	24¼	22¾	24	+ 1
32½	20½	25¾	22	952,575	25	do B	s62½cQ	Feb. 6, 28	400	23¾	23¾	22¾	23¾	+ 1¾
32⅜	20	26⅞	24	51,524.150	25	California Petroleum	25cQ	Mar. 1, 28	24,400	25⅜	26¼	25	25⅜	+ ½
96¾	65	93¼	71¼	20,665,000	100	General Asphalt	.....	.....	31,300	75	79	73½	76¼	+ 1¼
144⅞	107¼	140¼	114	6,872.200	100	do pfd	$1.25Q	Mar. 1, 28	300	121	122	121	121	+ 5⅛
175¾	60⅛	156⅛	127	25.000.000	100	Houston Oil	.....	.....	18,900	130	133⅞	†127	131½	+ 1
32¾	17⅝	28¼	21¾	(sh) 500.000	N.P.	Independent Oil & Gas	25cQ	Jan. 30, 28	6,700	24	26¼	23⅞	25½	+ 1½
12⅛	7⅝	12⅝	9	$3,280.240	$10	Indian Refining	.....	Dec. 15, 20	27,500	10½	13	10½	13	+ 2¾
12	7¼	10⅜	8½	4,550.110	10	do ctfs	.....	.....	60,100	10	13	10	13	+ 3
112	99	109	101	2,296.400	10	do pfd	.....	Dec. 15, 21	600	107	110	105⅛	110	+ 4⅞
37¾	20½	35⅞	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	Feb. 1, 28	10,600	29½	31⅞	29¼	31⅜	+ 1⅞
18⅛	10	12¾	9⅜	(sh) 1,136.500	N.P.	Louisiana Oil Refining	.....	.....	7,700	10⅛	10⅞	10⅛	10½	+ ¼
97	85¼	91	80	$4,000.000	$100	do pfd	$1½Q	Feb. 15, 28	20	88	88	86	88	0
22¾	12	18⅛	12½	(sh) 330.000	N.P.	Maracaibo Oil	.....	.....	3,000	14	15¼	13½	14⅞	+ 1
58½	31	37½	33	(sh) 2,316.647	N.P.	Marland Oil Co.	.....	Mar. 31, 27	36,100	34⅞	36⅜	34	35¾	+ ¾
320	200	360	280	$45,942.800	$100	Mexican Petroleum	$3Q	Jan. 20, 28	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Jan. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	8⅝	4⅝	(sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	56,800	6⅛	*8⅝	6⅛	7⅞	+ 1⅝
39⅜	25½	29½	25⅛	(sh) 1,357.461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	7,000	26	27½	25⅝	26½	+ ½
105	97	105½	103¼	$6,718.000	$100	do pfd	$1.75Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
3¾	1⅝	3⅜	2⅛	24,354,600	10	Middle States	.....	July 1, 23	6,600	2⅝	2⅞	2½	2⅝	0
2¾	1⅜	2¾	1½	5,445,620	10	do ctfs	.....	.....	200	1¾	1¾	1¾	1¾	0
1⅞	1	1⅝	1¼	(sh) 3.500.000	N.P.	Pacific Oil	.....	.....	15,000	1⅜	1⅜	1¼	1⅜	0
65⅞	40½	46¾	38¼	$48,807,400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	6,100	44	44⅞	40¼	44⅛	+ 4¼
66⅜	40¾	46¾	37¾	121,097.100	50	do B	.....	Oct. 20, 27	66,400	40	44½	39⅝	43½	+ 3¾
37⅞	16¾	21	18¼	(sh) 400.000	N.P.	Pan American Western B.	.....	Jan. 30, 27	1,600	19⅝	20	19¼	20	+ 1¼
18⅞	8	16½	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	1,200	13⅜	13⅞	12¾	13	+ ⅜
83	54	81	70	$2,935.200	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
60¼	36¼	43½	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	75cQ	Jan. 3, 28	67,300	37½	39¾	37	39	+ 1⅛
1⅛	½	¾	½	$29,622.925	$ 25	Pierce Oil Corp.	.....	.....	4,800	⅝	¾	†¼	⅝	0
24	13½	20½	16¼	15,000.000	100	do pfd	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
5½	2½	4⅝	3½	(sh) 2.500.000	N.P.	Pierce Petroleum	.....	.....	4,800	3¾	3¾	3½	3¾	+ ⅛
33⅞	16⅜	26	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	9,800	19½	20¼	18	19½	+ ¾
50	36⅞	45	41	2,845.350	50	do pfd	.....	May 1, 25	130	43½	44¾	43	43⅞	+ ⅛
33½	25	27¼	19	75,959.250	25	Pure Oil Co.	12½cQ	Mar. 1, 28	23,200	20½	21⅞	20⅛	21⅜	+ 1⅜
115½	111¾	112	112	13.000.000	100	do 8% pfd	$2Q	Jan. 2, 28	.....	.....	.....	.....	.....	.....
28⅝	25⅜	27⅞	24	$29,224,894	$25	Richfield Oil	25cQ	Feb. 1, 28	3,700	24⅞	25¼	24⅜	25	— ⅛
54½	44¼	48¾	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.343	Jan. 28, 28	2,800	46⅛	46½	45½	45½	— ⅜
47⅞	41⅜	43¼	40⅝	(sh) 77,590	£2	Shell Transport & T.	97c	Jan. 23, 28	300	43	43	42⅜	42⅜	— ⅞
31¾	24⅝	26⅞	23¼	(sh)10.000.000	N.P.	Shell Union Oil	35cQ	Dec. 31, 27	8,100	25⅜	26	24¼	25¼	+ ½
26⅜	14¼	24⅜	18⅜	$7,208.080	$ 10	Simms Petroleum	.....	Apr. 1, 27	12,000	20¼	21½	20	21¼	+ 1⅜
22⅜	15	21¼	17⅜	(sh) 4,501.915	N.P.	Sinclair Consolidated	.....	May 31, 24	78,800	19⅜	20¾	19	19⅞	0
104½	97	108	102½	$16,604,600	$100	do pfd	$2Q	Feb. 15, 28	300	103½	104½	104	104	+ ¾
37⅝	24⅛	28¼	25	27,396,590	25	Skelly Oil Co.	50cQ	Dec. 15, 27	39,900	25¾	26½	25¼	26	— ⅛
60¾	50¾	56⅝	53	(sh)13,016,434	N.P.	S. O. California	62½cQ	Dec. 15, 27	19,300	53⅞	54½	53½	54½	+ ⅝
41⅜	35⅛	40¼	37⅜	$607,605,400	$ 25	S. O. New Jersey	‡25cQ	Dec. 15, 27	23,600	38¼	39¼	38¼	39	+ ⅝
34⅛	29¾	31⅝	28¾	426,973.275	25	S. O. New York	40cQ	Dec. 15, 27	26,400	29⅜	30½	29⅜	30⅜	+ ¾
34⅞	30	38	31½	(sh) 1,206.073	N.P.	Sun Oil	‡25cQ	Dec. 15, 27	20,600	37⅝	41⅝	37⅝	39½	+ 1¾
101⅝	99	102	100	$5,000,000	$100	do pfd	$1.50Q	Mar. 1, 28	200	101¼	101¼	101¼	101¼	+ ¼
6½	3⅛	3⅞	2½	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	5,100	2¾	3¼	2⅝	2⅞	+ ⅛
58	45	55⅝	50	$180,464.200	$ 25	The Texas Corp.	75cQ	Jan. 1, 28	27,700	52¼	53½	51⅝	52	— 1½
18⅞	12	17	12½	8,380,340	10	Texas Pacific Coal & Oil	15cQ	Jan. 3, 28	13,300	13½	14⅝	12½	12¾	— ⅝
29⅛	19	22¼	19⅞	(sh) 2,168,404	N.P.	Tide Water Oil Co.	20cQ	Dec. 31, 27	600	19⅞	20	19⅞	20	+ ⅛
90⅛	85	90¾	87	$20,705,200	$100	do 5½% pfd	$1.25Q	Feb. 15, 28	300	88½	90	88½	89¾	— ¼
19¼	15¾	17¼	14¾	(sh) 4,796,101	N.P.	Tide Water Associated	.....	Aug. 1, 27	15,900	15¼	15¾	15½	15¾	+ ¾
90¾	85	87¾	82½	$72,745,900	$100	do pfd	$1.50Q	Jan. 3, 28	700	83	83¼	82⅞	83	0
10⅜	3¾	10⅛	7¼	(sh) 3,742.029	N.P.	Transcontinental Oil	.....	.....	123,600	7¾	9	7½	8⅝	+ ¾
56½	39⅜	45¾	42¾	$407.777,750	$ 25	Union Oil of California	50cQ	Feb. 10, 28	7,800	44½	45¼	44	45	+ ½
127½	94	125	119⅛	30,844.000	100	Union Tank Car Co.	$1.25Q	Dec. 1, 27	.....	.....	.....	.....	.....	.....
34½	24½	32⅞	26	(sh) 240,380	N.P.	Warner Quinlan	50cQ	Jan. 3, 28	3,400	29½	30⅞	29¼	30½	+ 1
27½	20	24¼	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	Jan. 20, 28	900	21	22	20¼	22	+ 1¾

*New High †New Low ‡Also extras s-Stock Total Sales 1,001,960

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended March 2 Sales	First	High	Low	Last	Change
9⅞	6⅛	9½	7½	$ 10	Arkansas Nat. Gas..	1,910	7¾	8	†7½	7¾	0
98⅝	80⅞	94	90¾	100	Columbia Gas.....	100	90¾	90¾	†90¾	90¾	0
107⅞	100	108	108	100	do pfd.....	.....	.....	.....	.....	.....	.....
15	7½	10	7½	10	Devonian Oil.....	50	8½	8½	8½	8½	0
117½	115	116	115	100	Duquesne Light pfd.	.....	.....	.....	.....	.....	.....
.....	.....	85	80½	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
12¼	6	13½	12	N.P.	Houston Gulf Gas..	30	13½	*13½	13½	13½	+ ¾
59¼	37¼	55¾	52½	$ 25	Lone Star Gas.....	1,035	54	54⅜	53½	54	0
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
8	5½	7¼	6¾	10	Salt Creek Cons.....	.....	.....	.....	.....	.....	.....
26½	17	20	19	10	Tidal Osage.....	125	19	19	†19	19	— 1
43	33	33¼	33	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended March 2 Sales	First	High	Low	Last	Change
.....	.....	.....	.....	$ 5	Duquesne Oil.....	.....	.....	.....	.....	.....	.....
95	88	.....	.....	25	Gulf Oil.....	.....	.....	.....	.....	.....	.....
10¾	5½	5⅝	5½	25	Leonard Oil & Dev.	1,000	5⅝	5⅝	5⅝	5⅝	+ ⅛
2.70	.30	1.00	.50	10	Omar Oil & Gas....	.....	.....	.....	.....	.....	.....
2¼	1¾	.....	.....	5	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
31	19	21¼	17½	5	Plymouth Oil.....	5,300	18⅞	20	18⅞	19½	+ ¾
6	5	.....	.....	5	States Oil.....	.....	.....	.....	.....	.....	.....
3⅛	1½	3⅛	2¼	1	Texon Oil & Land...	3,850	2½	2½	2⅜	2½	+ ⅛
23¾	18	16	15	10	Tidal Osage Non-vgt.	90	16	*16	16	16	+ 1

*New High †New Low xEx Dividend.

Oil Dividends

	Amount	Stock of Payable	Record
Borne Scrymser s.a.	$1	Apr. 16	Mar. 23
do extra	50c	Apr. 16	Mar. 23

Oil Company Earnings

	1927	1926
Argo Oil Co.	*$430.337	*$468,216
Borne Scrymser	114.307	139,266
Transcontinental	*1,380.146	1,209,303
Houston Oil	2,649.456	*262,683
Rio Grand Oil	318,726	241,619

*Deficit

Cleveland Stock Market

March 2	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	.....	.....	.....
do pfd	100	100	.....	100
Fred G. Clark	10	2⅝	3½	2⅝
National Refining Co.	25	35⅛	36	36
do pfd	100	134	135	135
Paragon Refining Co.	25	9¾	11	10
do pfd	100	106	108	106½

x Ex-Dividend

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 3 Sales	First	High	Low	Last	Change
21⅝	17⅛	22⅛	18¼	£ 4,126,460	£ 1	Anglo-American Oil	60¾c	May 31, 27	3,100	20¾	21⅜	20¼	20⅞	+ ¼
21½	17⅜	20½	18⅛	.....	£ 1	do cts. non-voting	.....	.....	400	19¾	19¾	19⅛	19¾	0
3¾	¾	1⅞	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	.....	.....	.....	.....	.....	.....
6½	2½	3½	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	51	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 27	300	51	54	†51	51	— 1
60	45	63	58	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 27	400	59½	59½	59¼	59¼	— ¼
126	76½	149¾	117¼	3,000,000	25	Chesebrough Mfg	$1Q	Dec. 28, 27	100	123¼	123¼	123¼	123¼	0
22⅜	16¾	22½	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	10,000	17½	18	17	17⅝	0
137	89	105	94	3,000,000	100	Cumberland Pipe Line	$2Q	Dec. 15, 27	.....	.....	.....	.....	.....	.....
68⅛	47	70	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 28	200	66	67	66	67	+ 1
13½	3½	6½	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	5½	5½	5½	5½	+ ½
59¾	23	36	27	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
60½	35½	41¾	35	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
68½	54	68	60	73,117,577	25	Humble Oil & Refining	‡30cQ	Jan. 1, 28	9,800	61⅝	65¼	60⅞	63⅞	+ 2⅜
182	123¾	187½	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 27	950	183¾	186	182¾	185¾	+ 2½
64¾	37¾	65¼	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 28	1,400	59	60¼	58½	59½	+ ½
94½	61	78¾	74⅞	$5,000,000	$ 50	Indiana Pipe Line	†$1Q	Feb. 15, 28	500	75	76¼	†74⅞	76¼	+ 1
39	28¼	43	35	(sh) 17,123,444	N.P	International Petroleum	25c	Nov. 15, 27	18,500	36⅞	37½	36½	37⅜	+ ¼
24	13¼	25	20½	$6,363,350	12.50	National Transit Co	25cQ	Dec. 15, 27	9,300	24½	*25	23¾	25	+ ¼
44½	31¼	49½	37½	5,000,000	100	New York Transit	.....	July 15, 26	100	49	49	49	49	— ½
100	70	106	94	4,000,000	100	Northern Pipe Line	‡$3S.A.	Jan. 1, 28	450	105½	111	105½	110½	+ 4¾
67⅞	52	66¾	58	60,000,000	25	Ohio Oil Co	‡50cQ	Dec. 15, 27	4,000	59¼	61⅞	59¼	60¾	+ ⅞
39	12	39⅜	29	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	8,800	37½	44¾	37½	43	+ 5⅜
55½	45⅜	50½	47⅜	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	7,900	49	49½	†47⅜	49	— ¼
190	132	214	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Feb. 1, 28	4,450	210	211	198¼	201	— 9
201½	175½	178	175	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 27	20	176	177	176	177	+ 1
27¼	15½	33⅛	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	300	25⅛	25½	25⅛	25½	0
41½	35	40⅛	36¾	20,00,000	25	South Penn Oil	50cQ	Dec. 31, 27	2,200	38⅞	39	38	38⅞	— ⅛
83	55½	96	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	Dec. 31, 27	2,050	93	*96	91	95	+ 1⅛
81⅛	64⅜	80½	70⅞	228,415,463	25	S. O. Indiana	‡62½cQ	Dec. 15, 27	33,200	74¼	75⅜	73⅛	74	+ ⅛
20⅞	14⅜	17½	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	500	15½	15⅞	15½	15½	— ½
130	111½	132¾	122¼	17,012,559	25	S. O. Kentucky	$1Q	Dec. 31, 27	9,600	127⅝	127⅝	124⅝	125⅝	— 2
49½	40	43	39⅜	4,559,850	25	S. O. Nebraska	62cQ	Dec. 20, 27	300	41	41	40¾	40¾	— ¼
87½	72	79	73¼	14,000,000	25	S. O. Ohio	62½cQ	Jan. 2, 28	450	74	74	†73¼	73¼	— ¾
122	117¼	120½	117	7,000,000	100	do pfd	$1.75Q	Dec. 1, 27	10	117¼	117¼	117¼	117¼	— ¾
21	14½	26	16	30,734,000	25	Swan Finch Co	.....	Nov. 1, 19	400	16	17	†16	16	0
149⅞	95⅛	149	136¾	62,470,800	25	Vacuum Oil	‡50cQ	Dec. 20, 27	8,700	145⅛	146¼	140½	142¼	— 3⅜

*New high †New low xEx dividend ‡Also extras.

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Mar. 3 Sales	First	High	Low	Last	Change
2⅞	.55	1½	.80	$ 5	Amer. Con. Oilfields	39,000	90	93	82	83	— ⅛
7½	2¾	4⅞	3⅛	N.P.	Amer. Maracaibo	5,100	3¼	4⅜	3¼	4⅛	+ ⅞
2¾	1	4	2¼	$ 10	Argo Oil	500	2¼	2¼	†2¼	2¼	— ⅛
9¾	6¾	9⅞	7¾	10	Arkansas Nat. Gas	600	7⅞	7⅞	†7¾	7¾	— ¼
20½	15½	....	....	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	39¾	32¾	N.P.	British American	100	34⅞	34⅞	34⅞	34⅞	0
28¼	15½	23⅞	18½	25c	Carib Syndicate(new)	1,900	21¼	23¼	21¼	22½	+ ⅜
26	15⅛	....	....	....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
58¾	40¼	57	54	$ 20	Cities Service	20,000	54¾	*57	54⅝	56¾	+ 1¾
95⅜	87	97	94½	100	do pfd	1,700	95½	*97	95⅜	97	+ 1½
8⅞	7⅜	9⅛	8⅞	10	do pfd. B	400	9	9	9	9	+ ⅛
29¼	22½	28¼	28¼	10	do banker's shares	100	28¼	28¼	28¼	28¼	+ 1⅜
3⅞	1⅜	1¼	1¼	1	Colombia Syndicate	8,200	1⅜	1⅜	1¼	1⅜	+ ⅛
9¾	6⅜	7¼	6¾	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
14⅞	9½	14⅛	10	N.P.	Creole Syndicate	14,000	13	*14⅛	12⅜	13⅝	+ ⅜
3	.50	1½	.80	N.P.	Crown Central	150	90	98	89	98	+ 3
12	4	13½	8⅛	N.P.	Darby Petroleum	1,300	10	*13½	10	13	+ 3
11½	4	12⅝	7⅞	....	do trust ctfs	300	10½	*12⅝	10½	12⅝	+ 3⅝
2½	.74	1⅞	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	....	....	N.P.	do pfd	.....	.....	.....	.....	.....	.....
3¾	1	2	1¼	N.P.	Gibson Oil	5,900	1⅜	1⅜	†1¼	1⅜	0
2	.40	.53	.51	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	117¼	101⅛	$ 25	Gulf Oil Corp	6,800	109	111	108	109	+ ¾
2½	.80	2½	1½	10	Intercontinent Pet	9,600	2⅛	2⅜	2⅛	2¼	+ ⅛
2¼	1⅛	1⅞	1¼	N.P.	Kirby Petroleum	100	1¼	1¼	1¼	1¼	— ⅜
10⅞	5⅛	6⅜	5⅛	N.P.	Leonard Oil & Dev	5,000	5½	5⅜	†5⅛	5½	0
27½	20	24⅜	20	N.P.	Lion Oil & Refg	8,800	20⅝	*24⅜	20⅛	23⅞	+ 3⅜
59⅜	37	55⅞	52	$ 25	Lone Star Gas	100	54	54	54	54	0
2⅞	.80	1⅜	1⅛	1	Magdalena Synd	14,500	1⅜	1⅜	1⅛	1⅛	0
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	40	N.P.	Margay Oil	100	40	40	†40	40	— 5
3	1½	....	....	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	6¾	5	N.P.	Mexico-Ohio Oil	100	5	5	†5	5	— ¼
1½	1	1⅜	1¼	$ 1	Mountain & Gulf	200	1¼	1¼	1¼	1¼	+ ¼
29¼	22¾	28⅝	25½	10	Mountain Producers	8,300	25⅞	26¾	25¾	26½	+ ⅝
5⅞	4⅝	5⅜	4¾	5	New Bradford	300	4⅞	4⅞	4⅞	4⅞	+ ⅛
6¼	4	4⅜	4¼	10	New England Fuel	100	4¼	4¼	†4¼	4¼	— ¼
16	9¼	9⅞	8¼	1	New Mex. & Ariz	200	8¼	8½	8¼	8½	+ ¼
13⅞	9	14¼	11½	25	New York Oil	100	13	13	13	13	0
12⅝	9½	12⅜	10¾	N.P.	North Cent. Texas	3,000	12	*12⅜	12	12¼	+ ¼
23⅞	21¼	....	....	....	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	3¼	N.P.	Pandem	3,100	4	4¼	†3¾	4	— ⅛
12⅛	7	10⅞	8½	N.P.	Panapec Oil	2,800	8⅞	9¼	†8½	8¾	0
9	7⅝	11⅜	10⅜	$ 25	Paragon Refg	.....	.....	.....	.....	.....	.....
.37	.25	....	....	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅜	6⅜	5⅛	$ 10	Pennok Oil	.....	.....	.....	.....	.....	.....
....	....	4⅛	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	12	9⅛	25	Red Bank Oil	200	10	10	†9⅛	9⅛	— 2⅞
15½	3½	5½	4⅛	N.P.	Reiter-Foster	1,000	4⅛	4⅝	4⅛	4⅝	+ ⅛
28⅜	15	25½	23¼	$ 25	Richfield Oil pfd	300	24⅜	24½	24	24½	0
7	4⅛	5⅝	4⅞	N.P.	Ryan Consolidated	100	5	5	5	5	0
8	5¼	7¼	6⅝	$ 10	Salt Creek Cons	2,200	6¾	6¾	†6⅝	6¾	0
35½	27¼	35	28½	10	Salt Creek Prod	8,900	30¼	31⅜	30¼	31½	+ 1¼
7	1¼	2	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
26½	17	20	13	10	Tidal Osage	2,100	19	19	16¼	17¼	+ 1
23¾	15	18	13⅛	10	do non-voting	2,400	16⅜	16¾	14⅝	15½	⅞
92	63½	86	82½	100	Transcontinental pfd	500	83½	86	†82½	86	+ ⅞
23¼	7	29½	18	10	Venezuela-Mexico	1,300	26	*29½	26	29½	+ 4½
7⅝	4⅛	6¼	4⅜	5	Venezuelan Petrol	1,500	5⅛	5⅝	5⅛	5⅜	+ ¼
32⅜	19½	22⅞	20	N.P.	Wilcox Oil & Gas	100	20	20	†20	20	+ ½
8	4⅜	7	6	$ 1	Woodley Petroleum	100	6	6	6	6	0
6	1¾	2¾	2⅛	25	Y Oil & Gas (new)	500	2¼	2⅝	†2⅛	2⅝	+ ⅜

*New High †New Low xEx Dividend

New York Curb Bonds

Week Ending March 2

	High	Low	Last	Ch'ge
Bacon Oil 6s '36	101	100¾	100¾	— ¼
Cities Serv. 5½s '66	92¾	92⅜	92¾	0
Cities Serv. 6s '66	103	103	103	0
Cities Serv. G 5½s '42	95	94⅝	95	0
Empire Oil 5½s '42	93¾	93⅝	93⅝	— ⅛
Galena Oil 5½s '42	87½	87⅛	87⅛	+ ⅛
Gulf Oil 5s '37	102⅛	102⅛	102⅛	+ ⅜
Gulf Oil 5s '47	101⅞	101½	101½	— ⅛
Independent Oil 6s '39	98½	97⅝	98½	— ¾
Phillips Pet. 5½s '39	92⅝	92¼	92⅝	+ ⅛
Richfield Oil 6s '41	99	98¼	98⅞	+ ⅞
S. O. N. Y. 6½s '33	103⅜	103⅛	103¼	0
Sun Oil 5½s '39	101¾	101	101¼	+ ¾
Trans. Con't. Oil 7s '30	109	105	109	+1
Valvoline 7s '37	106	105½	106	+1¾
Warner-Quin. 6s '42	99¼	98½	99¼	+ ½

New York Bonds

Week Ending March 2

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	103½	102¾	103	+ ¼
Atlantic Refg. deb. 5s	101½	100⅝	101¼	+ ¼
Barnsdall Corp 6s	100⅜	99½	100⅜	+ ⅜
Barnsdall Corp. 8s ex-war.	91⅞	91⅝	91⅝	0
Cal. Pet. 5s	100¼	99⅞	100¼	+ ⅝
Cal. Pet. 5½s	102	101⅝	102¼	+ ⅛
General Asphalt 6s	110½	109½	110	0
General Petroleum 5s	102½	102	102⅛	+ ⅛
Humble Oil & Refg. 5½s	102⅞	102⅝	102⅞	+ ¼
Humble Oil 5s	100⅜	100⅜	100⅝	0
Pan Amer. P & T 7s	105¼	105	105⅛	— ¼
Pan Amer. P & T 6s	103⅛	103	103⅛	0
Pan Amer. P & T 6s	93½	92¾	93½	+ ½
Pierce Oil deb. 8s	105⅛	105⅛	105⅛	— ⅜
Prod. & Refg. 8s	111½	111	111	— ⅜
Simms Pet. 6s	104	103¼	103¼	+ ½
Sinclair Con. Oil 7s	100¼	100	100¼	+ ¼
Sinclair Con. 6½s	98	97	97¾	+ ⅝
Sinclair Con. 6s D	98⅛	98	98	— ¼
Sinclair Crude Oil 5½s	98⅜	97½	97⅝	+ ¼
Sinclair Pipeline 5s	95¼	95	95¼	+ ¼
Skelly Oil 5½s	94⅜	94	94⅜	+ ⅜
S. O. N. Y. 4½s	97¼	96¾	96⅞	— ⅜
S. O. N. J. deb. 5s	103⅜	103⅜	103⅜	— ¼
Superior Oil 7s	102⅜	102¼	102⅜	+ ¼
Union Oil of Calif. 5s C	100	99⅞	99⅞	+ ⅛
White Eagle 5½s	94	93½	94	0

Union Oil Associates—This organization which controls the stock Union Oil Co. has elected A. L. Brock a director. Other directors and officers were re-elected.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

CHIEF CLERK now employed 7,000 bbl. mid-continent refinery, desires change account operating curtailment. Stenographer, Accountant, can handle any refinery office position. 29 years old, married, go anywhere. Available at once. Address Box 45.

DESIGNING DRAFTSMAN; age 30, ten years experience in oil refinery construction desires permanent location. Employed. Address Box 46.

REFINERY REPRESENTATIVE with retail and wholesale experience wishes connection with growing marketer in Minnesota and North Dakota. Address Box 44.

EIGHT YEARS EXPERIENCE COMPOUNDING all grades greases and oils. Laboratory experience, 30 years old, married. Desires position with reliable company. Address Box 42.

SALESMAN OR OFFICE ASSISTANT 15 years experience refinery wholesale—all products—past seven lubricants, central states. Prefer refiner connection where results determine value. Available March 15th, location immaterial, married. Address Box 47.

Situations Open

RESEARCH CHEMIST—Refinery located in East near New York requires services of research chemist experienced in oil industry. Must possess executive ability, vision, and foresight and be capable of guiding operation of fully equipped research laboratory. Give full particulars as to education, special qualifications, age, salary, present employers and references, all of which will be held confidential and returned to applicants who do not qualify. Address Box 48.

SALESMEN WANTED

We have some open territory for live salesmen who know the filling station and garage field. State experience, territory you are now covering and what lines you represent. Address Dayton Air Compressor Co., 425 Valley St., Dayton, Ohio.

SALES MANAGER WANTED

Established lubricating oil and grease company desires man to take charge of their Consuming Department. Will only consider one who has had experience in directing salesmen. Preference given to one already in charge of selling specialty lubricating oils, cutting compounds, soluble oils, greases, etc. to industrial plants in Eastern United States. In reply give age, experience. All answers confidential, if satisfactory will grant interview.

Address Box 38

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 W. 3rd St., Cleveland, Ohio, unless otherwise specified.

Wanted to Buy

USED TRUCK TANKS WANTED, 3-compartment for old model Ford Trucks. Western Oil Co., Iowa City, Iowa.

For Sale

BULK PLANT AND FILLING STATIONS FOR SALE

Prosperous business located in Michigan, handling high grade petroleum products. This business is making real money. Excellent opportunity. Price $30,000. Require $15,000 cash to make deal.

Write Box 40

BULK PLANT FOR SALE located in Northern Indiana, approximate gallonage 200,000 per year. Large lube and grease business also included. Will sell for reasonable amount to responsible party. Address Box 43.

FILLING STATION FOR SALE

One of finest filling stations in west costing $55,000, in agriculture and college town, wholesale plant and several outside pumps. With little effort business will clear $20,000 per year. Price $75,000. Will carry $25,000 loan. Selling account sickness.

C. S. Buchanan, Greeley, Colorado.

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Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Pennsylvania Gasoline Market Advanced

CLEVELAND, March 5.—Three of the larger Pennsylvania refiners advanced their U. S. Motor gasoline price to 8.25 cents a gallon Saturday and many of the smaller refiners have followed. A little gasoline was still available today to the unloader at 8 cents.

Fuel oil demand has been heavy in western Pennsylvania and prices have moved upward. Kerosene quotations cover a wide range because of indifferent demand. Most 45 water white moved today was at 6.25 and 6.375 cents.

Demand for viscous neutrals continues good. Prices are steady. One refiner reported sales 0.50 cent a gallon above the top prices of ranges quoted in this issue.

Cylinder stocks are spotty with prices of grades with uniform flash and fire points varying with color and other specifications. Season for bright stocks is yet several weeks off but a few makers have been pushing their products with result that many prices are reported. Larger manufacturers are holding for the heavy spring and summer business. One refiner reported sale of light bright stock of 30-35 cold test at 33 cents.

Wax is quieter after some heavy buying recently. Price of 122-124 A. m. p. white crude scale rose to 3.50 a pound, New York, last week but Saturday and today 3.25 cents, New York seemed to be the top of the market.

Higher Gasoline Market Expected in Ohio

CLEVELAND, March 5.—With an advance Saturday in price of U. S. Motor gasoline at large western Pennsylvania refineries, improvement is expected in the Ohio tank car market. Today gasoline was being delivered at 9 cents Cleveland, and 9.25 cents elsewhere in the state by one company. Another company was selling at 9.08 cents delivered in the eastern part of the state. Another company was reported to be shading these prices.

Under the new Pennsylvania schedule the delivered price would be 9.49 to 9.54 cents in eastern Ohio. This price figured back to a Group 3 basis would be 5.695 to 5.745 cents. The 9.08-cent price figures back to 5.38 cents Group 3 but, of course the gasoline does not come from Group 3.

Opinion was expressed today by several refiners and carload marketers in Ohio that the market in this state would advance shortly so that it would be more in line with delivered prices in other states.

ADVERTISERS INDEX

National Petroleum News

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American Hoist Corp.
American Machine & Foundry Co. 10
American Oil Pump & Tank Co.
American Radiator Co. 78
American Schaeffer & Budenberg Corp.
American La France & Foamite Corp. 56
American Steel Package Co. 116
American Telephone and Telegraph Co.
Anderson-Prichard Oil Corp.

Badger & Sons Company, E. B. 63
Barnickel & Co., Wm. S. 108
Barnsdall Refineries, Inc.
Barroll & Co., Henry E.
Bartlett Hayward Co.
Battenfeld Grease & Oil Co.
Bennett Pumps Corp.
Bessemer Gas Engine Co. 70
Best Stamp & Mfg. Co.
Bethlehem Steel Co.
Biggs Boiler Works Co. 58
Binks Spray Equipment Co.
Blackmer Pump Co. 59
Blaw-Knox Co.
Bolene Refining Co.
Bowser & Co., Inc., S. F.
Braden Steel & Winch Co.
Braun & Co., C. F.
Brown Instrument Co. Insert
Brown Sheet Iron & Steel Co. 124
Buckeye Boiler Co.
Buckeye Iron & Brass Works.
Buckeye Traction Ditcher Co.
Budd Wheel Co. 13
Buffalo Meter Co. 79
Butler Mfg. Co.

Campbell, J. A.
Canfield Oil Co., Cleveland 8–9
Carbondale Machine Co. 50
Celite Products Co.
Central Commercial Co.
Champion Pneumatic Mach. Co.
Champlin Refining Co.
Chemical Catalog Co.
Chestnut & Smith Corp. 90
Chevrolet Motor Co. 49
Chicago Pneumatic Tool Co. 40
Chicago Tubing & Braiding Co.
Cincinnati Advertising Products Co.
Clark Bros. Co. 81
Clark Co., Fred G.
Classified Advertising Section 134
Clear Vision Pump Co.
Combustion Engineering Corp. 5
Continental Ref. Co.
Continental Supply Co.
Crown Central Petroleum Corp.
Curtis Pneumatic Machinery Co.
Cushing Refg. & Gasoline Co.

Daugherty & Son Rfg. Co., W. H.
Davis Welding & Mfg. Co.
Dayton Air Compressors 58
Dayton Pump & Mfg. Co. 89
Dearborn Chemical Co.
Deepwater Oil Refineries
Diebold Safe and Lock Co.
Doelker Co., J. R.
Draper Mfg. Co. Inside Back Cover
Dunn Manufacturing Co. 66
Dyestuffs & Chemicals, Inc.

Eaton, J. E.
Edwards Mfg. Co.
Emerson-Scheuring Tank Co.
Empire Oil Works, Inc.
Empire Oil & Refining Co.
Erie Meter Systems, Inc. 93
Ethyl Gasoline Corp.

Farrell Mfg. Co.
Federal Motor Truck Co.
Fisk Tire Co., The
Fiske Bros. Refg. Co.
Flexlume Corp. 15
Fogarty Mfg. Co.
Foster-Wheeler Corp.
Foxboro Co., Inc.
Franklin Creek Refg. Co.
Freedom Oil Works
Frontier Mfg. Co.
Fry Equipment Corp.

General Ceramics Co.
General Insulating & Mfg. Co.
General Woodwork Corp.
Gilbert & Barker Mfg. Co. 117
Globe Mfg. Co. 80
Globe Oil & Refg. Co.
Goodrich Rubber Co. B. F.
Gott Mfg. Co., H. P. 74
Gousha Co., H. M.
Graham Brothers
Granberg Meter Corp
Graver Corp.
Gray Processes Corp.
Griscom-Russell Co.
Gulf Ref. Co. 114
Gustafson Bros. Oil Co.

Halliburton Oil Well Cementing Co. 73
Hartol Products Corp.
Hayes Equipment Mfg. Co.
Haynes Stellite Co.
Heil Co., The 14
Heine Boiler Co. 5
Highland Body Mfg. Co.
Holmes Co., Ernest
Hope Engineering & Supply Co.
Hotel Gibson
Hughes Tool Co. 109
Hull Sign & Mfg. Co.
Humble Oil & Refining Co. 57
Huntley & Huntley

Independent Oil & Gas Co.
Indiana Truck Corp.
Insulating Products Co.
International Combustion Eng. Corp. 5
International Derrick & Equip. Co.
International Harvester Co.

Jenkins Bros.

Kanotex Ref. Co.
Kellogg Co., M. W. 110
Kellogg Mfg. Co.
Klean-Rite Auto Laundry Co.

Ladd Water Tube Boiler Co. 5
Leach Co., C. H.
Lewis-Shepard Co.
Lientz & Co., B. P.
Linde Air Products Co.
Lubricating Appliance Mfg. Co.
Luce Trunk Co. 119
Lummus Co., The Walter E.

Marland Refg. Co.
Mars Company
Martin & Co., F. E.
Martin & Schwartz, Inc.
McDonald Mfg. Co., A. Y. 115
McKee & Co., Arthur G.
McNally & Co., Rand
Merco Nordstrom Valve Co. 107
Merit Oil Equipment Co.
Metal Hose & Tubing Co. 16–113
Metric Metal Works
Mid-Continent Petroleum Corp. 105
Milestone Meter Systems Inc.
Miller Sons Co., A. D.
Milwaukee Tank Works 2
Murdock Pump Co. 91

National Carbon Co., Inc.
National Oil Products Co.
National Petroleum News 12–118
National Recording Pump Co.
National Refining Co. 119
National Steel Barrel Co. 112
National Transit Pump & Machine Co. 61
National Tube Co. 69
Natural Gas Equip. Co. 48
Niles Steel Products Co.
North American Car Corp.
Northern Pump Co.

Oakite Products, Inc. 74
Oil Conservation Engineering Co.
Oil Products Appliance Co.
Oil Well Supply Co.
Omar Refining Co.
Oxweld Acetylene Co.

Paige & Jones Chemical Co., Inc.
Parkersburg Rig & Reel Co. 82
Pennsylvania Flexible Metallic Tubing Co.
Pennsylvania Refg. Co.
Petroleum Iron Works Co. 6
Pforzheimer & Co., Carl H.
Phillips Petroleum Co.
Pittsburgh-Des Moines Steel Co.
Pittsburgh Equitable Meter Co.
Pittsburgh Gasoline Pump Co.
Platt Co., W. C. 126
Pressed Steel Tank Co.
Prest-O-Lite Co.
Producers & Refiners Corp. 11
Professional Card Section
Pure Oil Co.
Pyrene Mfg. Co.

Quincy Compressor Co. 111

Reading Iron Co. 47
Reid Gas Engine Co., Jos.
Remington Rand Business Service, Inc.
Reo Motor Car Co.
Rhodes Co., Jay B.
Roper Corp., Geo. D.
Roxana Petroleum Corp.
Roy Manufacturing Co.

St. Louis Can Co.
St. Louis Steel Package Co.
St. Louis Surfacer & Paint Co.
Safety Lift Co. 88
Salem China Co.
Sargent Engineering Corp. 74
Selden Truck Corp.
Service Station Equip. Co. 7
Seymour-Howard Corp.
Sharpsville Boiler Works Co.
Shaw, S. F.
Shotwell Pump & Tank Co. 84
Simms Oil Co. 122
Sinclair Refining Co. 120
Sistersville Tank & Boiler Works 4
Skelly Oil Co.
Smith Corp., A. O.
Smith, Robert E. 91
Smith-Hamburg-Scott Welding Co. 87
Sonneborn Sons, Inc., L.
Southwestern Engineering Corp. 95
Spears & Riddle Co.
Standard Boiler & Plate Iron Works
Standard Garment Co. 124
Standard Lift Co.
Standard Liquid Testing Devices, Inc.
Steinke Brothers Mfg. Co., Inc.
Stevens Grease & Oil Co., A. J.
Stoll Oil Refg. Co.
Sun Oil Company 1
Sun Shipbuilding & Dry Dock Co. 77
Superior Oil Works 124

Tagliabue Mfg. Co., C. J.
Taylor Instrument Companies 53
Texas Company, The 92
Texas Pacific Coal & Oil Co. 85
Tokheim Oil Tank & Pump Co. 96
Transcontinental Oil Co.

Union Metal Mfg. Co.
United Filters Corp. 110
U. S. Air Compressor Co. Inside Front Cover
United States Cast Iron Pipe & Foundry Co.
Universal Oil Products Co. 55

Vacuum Oil Co.
Viking Pump Co. 88
Vilter Mfg. Co. 108
Viscosity Oil Co.
Vogt Machine Co., Henry

Wackman Welded Ware Co.
Wadhams Oil Co.
Walworth Co. 3
Warren Refining & Chemical Co.
Waukesha Motor Co. 39
Wayne Co. Outside Back Cover
Westcott & Greis, Inc.
Western Clay & Metal Co.
Wheaton Brass Works, A. W. 33
Wheeling Steel Corp.
Widdell Engineering Co., Inc.
Williams Sealing Corp.
Willock Oil Corp.
Wilson & Bennett Mfg. Co.

Youngstown Boiler & Tank Co. 110
Youngstown Welding Co., The

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Table of Contents

The Week's News

$20,000,000 Canadian Merger to Compete with Ethyl Gasoline 21
By Paul Truesdell
Stewart Reelected Chairman of Board, Standard of Indiana 24
Secretary Work Asks Oil State Governors for Views on Conservation 24
Western Refiners are Urged to Base Runs on Market Needs 29
By J. C. Chatfield
J. J. McGraw, Tulsa Banker, Dies Suddenly 32
L. V. Nicholas Retires from I. O. M. A. on March 19 32
All Petroleum Stocks Show Gains in January 32
California Shutdown Move Held Back by Landowners 46
By W. E. Green

Engineering

Cooperative Testing Halts Frenzied Drilling in Seminole 25
By Lawrence E. Smith
Little River Wildcats Prove Substantial Producers 41
By Lawrence E. Smith
Technical Control of Refinery Processes 51
By E. R. Phillips and A. E. Miller
Shell Still as Big Volume Distilling Unit 60
By C. W. Stratford
Application of Power in Oil Well Plunger Pumps 67
By L. C. Uren, Article 1
Solitude of West Texas Awakens to Chug of the Drill 83
By Paul Wagner
New Device to Burn Sludge Coke Under Refinery Boilers 101

Merchandising

Profitable Gasoline Business Lies in Oil Company Stations 17
Ohio Marketers Consider Code of Ethics 86
How Jobber Gained Control of Burner Oil Business 97
By A. S. James

Departments

Visiting Around the Refineries 94
By Paul Truesdell
Our Industry, Facts and Observations 106
New Stations 116
New Equipment 113
By Paul Wagner
New Patents 114
Oil Company Finance 132-133

Markets

Refinery Price Tables 123-125
Tank Wagon Price Tables 127
Complete Seaboard Markets 129
Crude Oil Prices, All Fields 130-131